3270 SUPEROPTIMIZER®/CICS
Customization Guide

3270 SUPEROPTIMIZER/CICS
3270 SUPEROPTIMIZER/CICS for VSE

Version 3.0

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‹bmcsoftware

Contacting BMC Software

You can access the BMC Software Web site at **http://www.bmc.com**. From this Web site, you can obtain information about the company, its products, corporate offices, special events, and career opportunities.

United States and Canada		Outside United States and Canada	
Address	BMC Software, Inc. 2101 CityWest Blvd. Houston TX 77042-2827	**Telephone**	(01) 713 918 8800
		Fax	(01) 713 918 8000
Telephone	713 918 8800 or 800 841 2031		
Fax	713 918 8000		

Customer Support

You can obtain technical support by using the Support page on the BMC Software Web site or by contacting Customer Support by telephone or e-mail. To expedite your inquiry, please see "Before Contacting BMC Software."

Support Web Site

You can obtain technical support from BMC Software 24 hours a day, 7 days a week at **http://www.bmc.com/support.html**. From this Web site, you can

- read overviews about support services and programs that BMC Software offers
- find the most current information about BMC Software products
- search a database for problems similar to yours and possible solutions
- order or download product documentation
- report a problem or ask a question
- subscribe to receive e-mail notices when new product versions are released
- find worldwide BMC Software support center locations and contact information, including e-mail addresses, fax numbers, and telephone numbers

Support by Telephone or E-mail

In the United States and Canada, if you need technical support and do not have access to the Web, call 800 537 1813. Outside the United States and Canada, please contact your local support center for assistance. To find telephone and e-mail contact information for the BMC Software support center that services your location, refer to the Contact Customer Support section of the Support page on the BMC Software Web site at **www.bmc.com/support.html**.

Before Contacting BMC Software

Before you contact BMC Software, have the following information available so that Customer Support can begin working on your problem immediately:

- product information

  — product name
  — product version (release number)
  — license number and password (trial or permanent)

- operating system and environment information

  — machine type
  — operating system type, version, and service pack or other maintenance level such as PUT or PTF
  — system hardware configuration
  — serial numbers
  — related software (database, application, and communication) including type, version, and service pack or maintenance level

- sequence of events leading to the problem

- commands and options that you used

- messages received (and the time and date that you received them)

  — product error messages
  — messages from the operating system, such as `file system full`
  — messages from related software

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About This Book

3270 SUPEROPTIMIZER®/CICS (SUPEROPT®) is a network performance product from BMC Software, Inc. This optimization product reduces response times to terminals and printers, increasing user productivity.

This book provides instructions for installing SUPEROPT and is intended for system programmers, administrators, and Customer Information Control System (CICS) technical support staff. To use this book, you should be familiar with the following items:

- your database management system (DBMS)

- CICS, Multiple Virtual Storage (MVS) systems, job control language (JCL), and the Interactive System Productivity Facility (ISPF)

- your client and host operating systems

For example, you should know how to respond to ISPF panels and how to perform common actions in a window environment (such as choosing menu commands and resizing windows).

How This Book Is Organized

This book is organized as follows:

Chapter/Appendix	Description
Chapter 1, "Installation Overview"	provides an overview of the installation process and contains information about product tapes and the BMC Software 30-day-plus free trial offer
Chapter 2, "Installation Preparation"	provides information about preparation for SUPEROPT installation
Chapter 3, "Installation Customization"	describes how to customize SUPEROPT after it has been installed
Chapter 4, "Optimizer Startup"	explains how to start the Optimizer and contains instructions for using COPBPRT, a batch program for printing data that has been routed to a VSAM file
Chapter 5, "Optimization in Production"	describes how to phase in optimization and perform some testing before placing the Optimizer into production

In addition, a glossary of terms and an index appear at the end of the book.

Related Documentation

BMC Software products are supported by several types of documentation:

- online and printed books
- online Help
- release notes and other notices

In addition to this book and the online Help, you can find useful information in the publications listed in the following table.

Category	Document	Description
installation documents	*OS/390 and z/OS Installer Guide*	provides information about the OS/390 and z/OS Installer
	3270 SUPEROPTIMIZER/CICS for VSE Installation Guide	provides instructions for using product authorization and instructions for installing SUPEROPT in VSE/ESA environments
core documents	*3270 SUPEROPTIMIZER/CICS General Information*	provides an overview of how SUPEROPT can enhance network performance
	3270 SUPEROPTIMIZER/CICS User Guide	provides instructions for using SUPEROPT to improve network performance at your site
	3270 SUPEROPTIMIZER/CICS Messages Manual	contains the product messages and explanations
supplemental documents	release notes, technical bulletins, flashes	provide current information about SUPEROPT

Online and Printed Books

The books that accompany BMC Software products are available in online format and printed format. If you are a Windows or Unix user, you can view online books with Acrobat Reader from Adobe Systems. The reader is provided at no cost, as explained in "To Access Online Books." You can also obtain additional printed books from BMC Software, as explained in "To Request Additional Printed Books."

To Access Online Books

Online books are formatted as Portable Document Format (PDF) files. You can view them, print them, or copy them to your computer by using Acrobat Reader 3.0 or later. You can access online books from the documentation compact disc (CD) that accompanies your product or from the World Wide Web.

In some cases, installation of Acrobat Reader and downloading the online books is an optional part of the product-installation process. For information about downloading the free reader from the Web, go to the Adobe Systems site at **http://www.adobe.com**.

To view any online book that BMC Software offers, visit the support page of the BMC Software Web site at **http://www.bmc.com/support.html**. Log on and select a product to access the related documentation. (To log on, first-time users can request a user name and password by registering at the support page or by contacting a BMC Software sales representative.)

To Request Additional Printed Books

BMC Software provides printed books with your product order. To request additional books, go to **http://www.bmc.com/support.html.**

Online Help

SUPEROPT includes online Help. In the SUPEROPT ISPF interface, you can access Help by pressing **F1** from any ISPF panel.

Release Notes and Other Notices

Printed release notes accompany each BMC Software product. Release notes provide current information such as

- updates to the installation instructions
- last-minute product information

In addition, BMC Software sometimes provides updated product information between releases (in the form of a flash or a technical bulletin, for example). The latest versions of the release notes and other notices are available on the Web at **http://www.bmc.com/support.html**.

Conventions

This section provides examples of the conventions used in this book and explains how to read ISPF panel-flow diagrams.

General Conventions

This book uses the following general conventions:

Item	Example
information that you are instructed to type	Type **SEARCH DB** in the designated field.
specific (standard) keyboard key names	Press **Enter**.
field names, text on a panel	Type **the appropriate entry** in the **Command** field.
directories, file names, Web addresses	The BMC Software home page is at **www.bmc.com**.
nonspecific key names, option names	Use the HELP function key. KEEPDICTIONARY option
MVS calls, commands, control statements, keywords, parameters, reserved words	Use the SEARCH command to find a particular object. The product generates the SQL TABLE statement next.

code examples, syntax statements, system messages, screen text	`//STEPLIB DD`
	
	`The table` *table_name* `is not available.`

emphasized words, new terms, variables	The instructions that you give to the software are called *commands*. In this message, the variable *file_name* represents the file that caused the error.

This book uses the following types of special text:

Note: Notes contain important information that you should consider.

Warning! Warnings alert you to situations that could cause problems, such as loss of data, if you do not follow instructions carefully.

Tip: Tips contain useful information that may improve product performance or that may make procedures easier to follow.

Panel-Flow Diagrams

Panel-flow diagrams summarize the ISPF panels that you see while completing specific tasks. The following example explains how to read a panel-flow diagram:
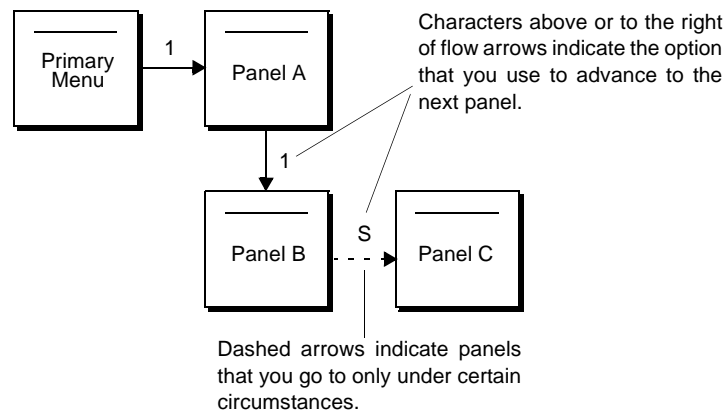
Chapter 1   Installation Overview

Note: This chapter includes information about MVS *and* VSE/ESA
systems.

This chapter provides an overview of the installation process. This chapter
contains the following sections:

Installation System

> **Note:** 3270 SUPEROPTIMIZER®/CICS for VSE must be installed by using a VSO-labeled tape. For VSE/ESA installations, the VOLSER of the tape is VSO*xxx* (where *xxx* is a three-character sequence identifier). For information about unloading a VSO-labeled tape, see the *3270 SUPEROPTIMIZER/CICS for VSE Installation Guide*.

3270 SUPEROPTIMIZER®/CICS (SUPEROPT) can be installed by using the OS/390 and z/OS Installer. The installation system provides the combined benefits of IEBCOPY and System Modification Program Extended (SMP/E).

- IEBCOPY loads all the required elements from tape but does not create a change management environment.

- SMP/E performs the actions of IEBCOPY and implements a change management environment.

> **Note:** SUPEROPT is now supported by Electronic Software Distribution (ESD). For more information, see the *OS/390 and z/OS Installer Guide.*

The installation system combines tape images, copies files to your system (IEBCOPY or SMP/E), and creates installation job control language (JCL). The installation system delivers the speed and simplicity of IEBCOPY *and* the control and flexibility of SMP/E, enabling a fast customization path for customers who require a rapid installation and the ability to view each customization step.

The installation system provides the following options for installing your BMC Software products:

- Standard installation:

    — IEBCOPY unload (required)
    — SMP/E library creation

- Full SMP/E installation

The installation system provides a consistent distribution, installation, customization, and maintenance process for installing BMC Software solutions on OS/390 and z/OS platforms. For more information about installing SUPEROPT by using the OS/390 and z/OS Installer, see the *OS/390 and z/OS Installer Guide*. For information about customizing SUPEROPT after the product has been installed, see Chapter 3, "Installation Customization."

Installation Checklist

The installation checklist outlines the steps that you must perform to install and run your product (or products). The checklist summarizes what you must do and refers you to detailed instructions.

The checklist is divided into the following sections:

- "Preparation Steps" on page 1-4
- "Installation Steps" on page 1-5
- "Customization Steps" on page 1-6

When you have completed the installation, see "Where To Go From Here" on page 1-7.

Combining Checklists for Multiple Products

The checklist is for the product (or products) that are listed in "Products" on page 1-3. You can use the Installation Checklist Generator to create a checklist that integrates the checklist in this book with checklists in other product books.

When you use the checklist generator, you select the products that you are going to install and the checklist generator produces an integrated checklist. The integrated checklist outlines all steps that you must complete for successful installation of all your products.

The checklist generator is available on your documentation CD. For information about running the checklist generator, see the *OS/390 and z/OS Installer Guide*.

Note: The Installation Checklist Generator runs with Microsoft Internet Explorer 4.01 and later and Netscape Navigator 4.08 through 4.78, inclusive.

Products

This checklist pertains to the following BMC Software product:

3270 SUPEROPTIMIZER/CICS version 3.0.06

Preparation Steps

The following preparation steps help you prepare for installation of your products. The steps describe the tasks that you must complete and the items that you must assemble before you start installation.

✔	Step	Task	Description	Reference
	1	assemble needed materials	Gather all installation tapes, tape cover letters, product release notes, product technical bulletins, the *OS/390 and z/OS Installer Guide*, customization guides, planning guides, and so on.	your product shipment and the **support page** on the BMC Software Web site
	2	review product release notes	The release notes describe enhancements, changes, and fixes for a product and contain important information you need to know.	your product shipment
	3	review technical bulletins and flashes	Technical bulletins and flashes contain information about problems that have been identified since the product was last released.	your product shipment and the **support page** on the BMC Software Web site
	4	obtain product passwords	Contact BMC Software if you have not received passwords for your products.	*OS/390 and z/OS Installer Guide*, "BMC Software Product Authorization" appendix password authorization letter
	5	read prerequisites	Prerequisites state the operating system version requirements, space requirements, authorization requirements, and so on.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Preparation" chapter
	6	read migration considerations	Migration considerations describe the process of migrating from a previous version of the product or from another product.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Preparation" chapter
	7	read installation considerations	Installation considerations describe information about running with other products and product implementation.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Preparation" chapter
	8	obtain authorization to complete the installation	Reading the installation tapes or creating the installation data sets might require RACF authorization.	contact your system administrator, security administrator, or other administrator
	9	obtain authorization to complete customization	Customization of some products might require APF authorization.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Preparation" chapter

✔	Step	Task	Description	Reference
	10	complete planning, testing, and setup	This information is required before product installation and for migration from another product.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Overview" chapter *3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Preparation" chapter
	11	fill out worksheets	A worksheet contains information, such as data set names and library locations, that you will need for completing installation.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Overview" chapter

Installation Steps

The following installation steps help you run the BMC Software OS/390 and z/OS Installer to successfully complete installation for all of your OS/390 and z/OS BMC Software products. The installation system combines tape images, copies files to your system (Standard or SMP/E), creates installation JCL, and applies maintenance to installed products.

✔	Step	Task	Description	Reference
	1	understand the installation system	The installation system has features and functions that you should be familiar with before using it.	*OS/390 and z/OS Installer Guide*, "Introduction" chapter
	2	unload the base installation libraries from the installation tape	The base installation libraries contain the installation system.	*OS/390 and z/OS Installer Guide,* "Using the Installation System" chapter
	3	create the customized installation libraries	The customized installation libraries specify a site-specific installation environment.	*OS/390 and z/OS Installer Guide,* "Using the Installation System" chapter
	4	start the installation system	The installation system automates many installation steps.	*OS/390 and z/OS Installer Guide,* "Using the Installation System" chapter
	5	specify repository information	The repository profile contains installation and customization options that are used when performing subsequent installations.	*OS/390 and z/OS Installer Guide,* "Using the Installation System" chapter
	6	specify user options	The user options determine how the installation system runs and specify where installation JCL is stored.	*OS/390 and z/OS Installer Guide,* "Using the Installation System" chapter
	7	select the products to install	The installation system generates all the steps necessary for the products you want to install.	*OS/390 and z/OS Installer Guide,* "Using the Installation System" chapter

✔	Step	Task	Description	Reference
	8	run the JCL that was created by the installation system	The installation system presents installation JCL for your approval and helps you to run the JCL.	*OS/390 and z/OS Installer Guide*, "Running Installation JCL" chapter
	9	specify product authorization passwords	Permission to run your products is granted.	*OS/390 and z/OS Installer Guide,* "Using the Installation System" chapter

Customization Steps

The following customization steps describe the tasks that you must complete to run your product (for some products, additional customization options might be available once the product is running). Some tasks might be performed by using the installation system, while other tasks might be performed by using a separate utility.

✔	Step	Task	Description	Reference
	1	choose the customization option in the installation system	Customization is started through the customization option in the installation system.	*OS/390 and z/OS Installer Guide,* "Using the Installation System" chapter
	2	create or update system objects, components, or resources	System objects, components, and resources include such items as sysplex or coupling facility, VTAM, TCP/IP, and LPARs.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Customization" chapter
	3	create or update subsystem objects, components, or resources	Subsystem objects, components, and resources include such items as DB2 plans, DB2 table spaces, and APPLIDs.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Customization" chapter
	4	allocate, create, or update data sets or files	Many products require specific data sets or files.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Customization" chapter
	5	set up data collectors	Many products use a data collector to store system data that they have collected.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Customization" chapter
	6	install or update the interface	Some products require customization of ISPF or require the use of an interface other than ISPF.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Customization" chapter
	7	create or update profiles or global parameters	Most products require profiles or parameters to be set or updated.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Customization" chapter
	8	create or update the initialization PROC, CLIST, REXX EXEC, or started task	Most products require a startup routine to run.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Customization" chapter

✔	Step	Task	Description	Reference
	9	define or update security (optional)	Security is administered with RACF, CA-ACF2, or CA-TOP SECRET. (Because you can proceed without defining or updating security, you might want to postpone this step until later.)	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Customization" chapter
	10	implement user exits	Some products provide user exits for interfacing with the product.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "CICS Exit Program Installation" chapter
	11	perform additional customization tasks for your products	Some products require additional tasks to be performed before the products are completely installed.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Customization" chapter
	12	verify customization	Some products provide information to verify customization of the product.	*3270 SUPEROPTIMIZER/ CICS Customization Guide*, "Installation Customization" chapter

Where To Go From Here

When installation of your products is complete, refer to the following books:

Product	Book
SUPEROPT	*3270 SUPEROPTIMIZER/CICS Customization Guide*

Chapter 2   Installation Preparation

This chapter provides information about preparing for SUPEROPT installation. This chapter describes the materials, system, storage, authorization, product libraries, function modification IDs (FMIDs), allocation data set members, and DDDEF members that are required when you install SUPEROPT in an MVS environment.

This chapter contains the following sections:

Overview

Before you install SUPEROPT, you must gather specific information. This chapter describes the materials that can help you install and customize SUPEROPT.

Required Materials

This section describes the materials that you must gather and review before installing SUPEROPT.

Books and Notices

Table 2-1 lists the installation and customization books that you will need to install and customize SUPEROPT.

Table 2-1   Installation and Customization Materials

Material	Description
release notes, flashes, and technical bulletins	provide important product information and last-minute information
OS/390 and z/OS Installer Guide	provides information about using the OS/390 and z/OS Installer to install SUPEROPT in an MVS environment
3270 SUPEROPTIMIZER/CICS Customization Guide	provides instructions for customizing SUPEROPT after it has been installed
3270 SUPEROPTIMIZER/CICS for VSE Installation Guide	provides instructions for installing SUPEROPT in a VSE/ESA environment

Checklists

The installation checklist outlines the steps that you must perform to install and run SUPEROPT in an MVS environment. The checklist summarizes what you must do and refers you to detailed instructions.

The Installation Checklist Generator is available on your documentation CD, and the most current version is on the BMC Software Web site at **http://www.bmc.com/support.html**. Using the checklist generator, you can select a set of products that are available in the installation system to produce an integrated checklist that lists each step that you must complete for successful installation.

The checklist provides the following information:

• list of preinstallation tasks to complete and items to assemble

• specific installation tasks to help you run the installation system and successfully complete the installation

• list of the customization tasks that are necessary to run your product

• references to where you can find additional or supporting information

You can run the Installation Checklist Generator *or* you can copy and combine checklists from the customization books for the BMC Software products that you plan to install.

Worksheets

Worksheets are provided for many BMC Software products. A worksheet contains information, such as data set names and library locations, that you will need for completing installation. Before beginning installation, copy and combine all worksheets from the customization books for the BMC Software products that you plan to install.

During the installation and customization process, you must provide information about your system. Before you install and start testing SUPEROPT, gather the information that is listed in Table 2-2 on page 2-5. You can record the information for your data center in the **Information** column.

Table 2-2   Preinstallation Worksheet

Item	Information
identify your CICS environment	
determine whether your site uses the CICS Autoinstall feature	
determine whether you have a multiregion operation (MRO) environment	
determine whether your operators use the **Erase Input** key	
determine whether your SCS printers support horizontal formatting control codes (Set Horizontal Format and Horizontal Tab)	
determine whether data streams are searched for specific information	

Prerequisites

Your site must provide certain system requirements and an environment to support SUPEROPT. This section describes software and hardware requirements, program specifications, and storage requirements.

Supported Software and Hardware

SUPEROPT supports the following software and hardware:

• VTAM (SNA and non-SNA), TCAM, and BTAM

• 3600 and 4700 controllers and 3790 devices with decompression capability

• all 3270 devices and character sets

SUPEROPT supports the following 3270 devices and character sets:

- color
- SCS printers
- extended attributes
- program symbols
- SNA data streams
- non-SNA data streams
- screen sizes:
  - 12 rows by 40 columns
  - 12 rows by 80 columns
  - 24 rows by 80 columns
  - 32 rows by 80 columns
  - 43 rows by 80 columns
  - 27 rows by 132 columns
  - any other valid screen or partition size

Software Requirements

Your site must have one of the following operating systems:

- OS/390 or z/OS
- VSE/ESA

Note: For information about installing SUPEROPT in a VSE/ESA environment, see the *3270 SUPEROPTIMIZER/CICS for VSE Installation Guide*.

Your site must also have one of the following versions of CICS:

- CICS TS
- CICS TS for VSE
- CICS/ESA 4.1
- CICS/VSE 2.3

SUPEROPT does *not* require the following items:

- temporary storage program
- basic mapping support (BMS)
- terminal control table user area (TCTUA)

CICS Environment

SUPEROPT requires the following facilities from CICS:

- command-level support
- CICS user exit interface
- 120 kilobytes (KB) of virtual storage for the Optimizer code
- 18 KB to 2 gigabytes (GB) for work areas (dependent on options)

In addition, BMC Software recommends the following facilities:

- VSAM support in the file control program for the COPOPT options file and for the COPRINT file

- inquire/set support for CICS (without this support, dynamic terminal areas are used for all terminals)

- transient data program for message handling and optional printing

Optimizer Component

The Optimizer component has the following characteristics and features:

- It is a CICS user-exit interface program written in assembler language.
- It is reentrant.
- It requires 120 KB of virtual storage and should be marked as resident.
- It supports RMODE=ANY AMODE=31.

Monitor Component

The Monitor component has the following characteristics and features:

- It is a CICS command-level assembler language program.
- It contains 94 KB of online Help.
- It uses 38 KB for startup processing.
- It contains 238 KB of Monitor executable code.
- It contains 13 KB of messages.
- It does not need to be resident.
- It supports RMODE=ANY AMODE=31.

Storage Acquisition

SUPEROPT requires virtual storage for five data areas. Your site may control, from the Monitor, how much storage is acquired for each area. A default amount is provided for each area.

If the Optimizer does not have enough storage to perform optimization, no optimization will occur. The Optimizer will never acquire more storage than you specify.

Storage is acquired as follows:

- The COPOPT program requires 272 bytes of dynamic storage area (DSA) for all CICS releases.

- CICS/ESA (version 4.1 or later) uses storage in the extended dynamic storage area (EDSA).

Storage Use

The Monitor displays statistics that show how much storage is being used and how many data streams were not optimized because the storage was insufficient.

BMC Software recommends that you keep track of the used storage so that the Optimizer does not have too much or too little storage.

Imaging and SCS Printer Data Storage Area

The Imaging® and SCS Printer Data Storage Area keeps a copy of what users see on their terminals or, for SCS, a copy of the current tab settings:

- For MVS/370 and VSE/ESA environments, you can specify any amount from 0 to 16,376 KB.

- For MVS/ESA, OS/390, and z/OS, you can specify any amount from 0 to 2,097,144 KB.

Data Stream Work Areas

Two Data Stream Work Areas hold a copy of the data stream that is being processed. You can specify any amount from 1 to 31 KB (the amount will apply to *each* area). For example, if 6 KB is entered, *each* area will be 6 KB.

3270 Buffer Work Areas

Three 3270 Buffer Work Areas hold copies of the 3270 buffer for the data stream that is being processed. You can specify any amount from 1 to 31 KB. This amount will be used for each of the three areas. For example, if 4 KB is entered, *each* area will be 4 KB.

Dynamic Terminal Areas

Dynamic terminal areas (DTAs) are used for terminals that are dynamically allocated by using the CICS Autoinstall feature. You can specify any *number* of areas from 0 to 32,767. Each terminal requires one DTA. Each area is 92 bytes.

a lists the default values for DTAs and Imaging storage for all operating systems.

Table 2-3   Default Values for All Operating Systems

Operating System	Imaging Value	DTA Value
MVS/ESA	5120 KB	2500
OS/390	5120 KB	2500
VSE/ESA	2048 KB	1000
z/OS	5120 KB	2500

Note: To change the amount of Imaging storage, run the COPBSET program. For more information about the batch Set Options programs, see Chapter 3, "Installation Customization."

For more information about the CICS Autoinstall feature, see "CICS Autoinstall Feature" on page 2-15.

Transid Statistic Areas

Transid Statistic Areas are used to collect data stream optimization statistics by Transid. You can specify any *number* of areas from 0 to 32,767. (The default is 0.) Each area is 32 bytes.

Virtual Storage

All virtual storage is obtained above the 16 MB line. For information about minimizing the use of virtual storage, see Chapter 5, "Optimization in Production."

Storage Requirements for CICS/ESA 4.1 or Later

Table 2-4 on page 2-10 lists the requirements for calculating CICS/ESA 4.1 (and later) dynamic storage areas.

Warning! If you do not use the correct resource definition online (RDO) definitions, and SUPEROPT is not started from the program list table (PLT), the product will use Extended User Dynamic Storage Area (EUDSA), *not* Extended CICS Dynamic Storage Area (ECDSA).

Table 2-4   Calculating Dynamic Storage Requirements for CICS/ESA 4.1 or Later

Storage Area	Space Requirement
CDSA	12 KB
ERDSA	136 KB (optimizing code) + 264 KB (COPMON) **Note:** If you are not using ERDSA, add this result to ECDSA.
ECDSA	To determine ECDSA, use the following calculation[a]: Imaging + SCS Storage + wrap trace buffer size + [number of terminal work areas $\times$ 144] + [number of transaction work areas $\times$ 48] + [data stream work area size $\times$ 2] + [3270 buffer work area size $\times$ 3]
EUDSA	0 KB (not used)
UDSA	0 KB (not used)

[a] Terminal work area = dynamic terminal work areas +
  number of terminals that are defined to CICS when COPINIT is run.
  For more information about this calculation, see a.

Table 2-5 on page 2-11 shows the panel number where the information for calculating ECDSA is located.

Table 2-5   **Information for ECDSA Calculation**

Information	Panel
Imaging	1.6.1
SCS Storage	1.6.1
wrap trace buffer size	3.4
number of terminal work areas	1.6.3
number of transaction work areas	1.6.3
data stream work area size	1.6.2
3270 buffer work area size	1.6.2

Product Authorization

Ensure that you have the bypass product authorization passwords for each product that you want to install. You must supply them during installation. If the bypass product authorization passwords are not in the shipping box, they are available from your BMC Software sales representative. This procedure installs each product for which you have a product authorization password.

Before you can use SUPEROPT, you must perform product authorization. For more information about the BMC Software Product Authorization utility, see the *OS/390 and z/OS Installer Guide* or the *3270 SUPEROPTIMIZER/CICS for VSE Installation Guide*.

Installation Considerations

This section discusses options for the installation and servicing of BMC Software products. It can help you determine which product distribution method is appropriate for your site's installation and maintenance goals.

Installation Method Selection

The most desirable installation method should suit your product configuration needs while requiring the least amount of time and effort to install your products. To help you choose the best installation method, consider the following items:

- existing BMC Software products that are installed at your site
- BMC Software products that you plan to trial or add to your data center
- maintenance level of BMC Software products at your site
- time and effort that are required for product customization
- installer's knowledge of SMP/E procedures and terminology

Note: Any existing products that are replaced by using the OS/390 and z/OS Installer must be recustomized.

Before you can install SUPEROPT and make it operational, you must consider the following prerequisites:

- operating system software requirements for SUPEROPT

- amount of virtual storage that is required for operation of SUPEROPT

- amount of DASD storage that is required for installation of SUPEROPT by using the OS/390 and z/OS Installer

- target system changes that you might need to make before installing and customizing SUPEROPT

Target System Changes

Before installing and customizing SUPEROPT, you must make the following target system changes:

- Determine whether your site security system controls access to tape data sets at the data set name level.

  If your security system controls access to tape data sets at the data set name level, perform the following actions:

  — Define a rule for each data set to provide read access (by first scanning the tape to determine the data set names).

  — Execute the installation jobs by using an authority level that is sufficient to provide generic read access.

- If you will perform AutoCustomization (for more information, see "AutoCustomization" on page 3-2), you must ensure write access to the following items:

  — SYS1.PARMLIB
  — JES procedure library (SYS1.PROCLIB or equivalent)
  — previously APF-authorized load library
  — SYS1.VTAMLST (or equivalent) for MAINVIEW Alternate Access

Standard CICS User Exits

SUPEROPT uses only *standard* user exits that CICS provides:

- XKCREQ
- XPCFTCH
- XTCIN
- XTCOUT
- XTCTIN
- XTCTOUT
- XZCIN
- XZCOUT
- XZCOUT1
- XXMATT

Other programs in your CICS system might use one or more of these CICS exits. CICS passes control to the programs in "first enabled, first called" order. If you need the programs to run in a certain order, BMC Software recommends that you use a PLT at CICS startup to specify the order in which the programs will be enabled.

LPA, ELPA, and SVA

If you are running several CICS systems, they can share a copy of the following modules:

- COPOPT
- COPOPT23[a]
- COPOPT41[a]
- COPOPT51[a]
- COPOPT52[a]
- COPOPT53[a]
- COPOPTXA[a]

These modules can also be placed in your link pack area (LPA) if you have MVS, or in your shared virtual area (SVA) if you have VSE/ESA.

[a]These modules can be placed in the extended link pack area (ELPA).

MRO Environments

If your site is using MRO, install SUPEROPT in *each* terminal-owning region.

To optimize any terminals or printers that are owned by an application region, install the product in this region as well. The Optimizer optimizes data streams when the data streams are being sent to or from the terminal. Optimization does not occur when the data streams are sent between regions.

Warning!   If the COPRINT print and/or the COPOPT options VSAM files are used, they *must be local* if you start the Optimizer by using a PLTPI parameter for program system initialization. If the files are remote, a U601 abend results. This is a CICS restriction. If a PLTPI is not used, both files can be remote.

Transids Routed by the CRTE

The Optimizer identifies all your transactions that are routed by the CRTE as TRANSID=CRTE.

Transactions that are routed by using the program control table (PCT) SYSIDNT parameter to specify the remote system name are identified in the normal manner.

Note: The Monitor transaction cannot be remote.

CICS Autoinstall Feature

SUPEROPT functions correctly with the Autoinstall (automatic installation of terminals) feature of CICS/VS 1.7 or later.

The Optimizer saves information about each terminal in a DTA. Using the Dynamic Terminal Areas feature, the Optimizer builds as many of these areas as you specify.

Table 2-2 on page 2-21 shows the default number of DTAs for all operating systems. To change the number of DTAs, use option 1.6.3. The new number takes effect *immediately*.

MVS/ESA, OS/390, and z/OS

No modifications are needed for MVS/ESA, OS/390, or z/OS environments. If you are using the extended architecture (XA) option of CICS, the product performs the following activities:

- detects these environments dynamically and exploits them

- automatically places all programs and work areas above the 16 MB line, except for a control program of 266 bytes

- obtains storage from EDSA if you are using CICS/ESA

BMC Software recommends the storage that is listed in Table 2-6, based on an MVS/ESA, OS/390, or z/OS environment (with the XA option of CICS being used) in which all storage that is used by SUPEROPT is obtained from above the 16 MB line. CICS/ESA storage is allocated from the EDSA.

Table 2-6   Storage Recommendations for MVS

Panel	Option	Recommendation
1.6.1	Set Imaging and SCS Storage Allocation size	2048 KB
1.6.1	To reduce Storage Compression Percentage	0%
1.6.2	Set data stream storage size	31 KB
2.0.0	Set the 3270 Buffer storage size	31 KB

CICS/ESA

If you are running CICS/ESA, COPINIT must run after the entry for DFHDELIM in the PLT startup.

If you use the CMDSEC=EXTERNAL option or PCT entries, COPSHUT must run before the entry for DFHDELIM in the PLT shutdown.

Customization Options

Because data center requirements vary, BMC Software provides several options to help you customize SUPEROPT to meet your needs. These options let you perform the following actions:

- use the VTAM Netname or CICS Termid to identify terminals for optimizing, and for storing and displaying the optimization statistics

- exclude from or include for optimization all data streams that are sent to your CRTs or printers

- control whether data streams that were optimized by the Imaging Optimization technique are sent to your CRTs or printers

- control whether Input Suppression optimization is used

- control whether your terminal operators can use the **Erase Input** key

- control whether SCS printer optimization is used

- control the amount of storage that is used by the Optimizer

- change the number of dynamic terminal areas

- change these options from the Monitor after you have installed the Optimizer

For in-depth discussions about these options, see the *3270 SUPEROPTIMIZER/CICS User Guide*.

Product Implementation

This section describes the product libraries, function modification IDs (FMIDs), allocation data set members, and DDDEF members that are provided when you install SUPEROPT.

Note: This section describes information that is required for SUPEROPT when it is installed in an MVS environment only.

Determine the Current Version (SUPEROPT Already Installed)

If SUPEROPT is installed at your site, you must determine the product version before proceeding with installation. If you are using 3270 SUPEROPTIMIZER/CICS 1, and exclude/include tables are defined, you must run a batch migration program before you can begin installation. With all subsequent versions, the migration is transparent, and you must perform only a maintenance installation. To determine the product version, access the Monitor and look at the panel that is displayed.

If the Monitor panel resembles Figure 2-1, 3270 SUPEROPTIMIZER/CICS version 2.5 or later is installed.

Figure 2-1   Sample Panel for 3270 SUPEROPTIMIZER/CICS 2.5 or Later

```
(Menu)                     3270 SUPEROPTIMIZER/CICS           June 30, 2001
Option. . _____                  Primary Menu                     12:59:29
                                 CICSID:CICSMGF


Type password.
  Current . . . . .
  New . . . . . . .

Select a choice from below.        Optimizer status . . . : Inactive
_ 1. Optimization control          SUPEROPT Trial . . . . :   93 Days Remain
  2. Data Stream Statistics
  3. Data Stream Analysis          Imaging. . . . . . . . : On
  4. Status                        Input Suppression. . . : On
                                   Erase Input Key Allowed: No
  9. Print or Reset Statistics     SCS Printer. . . . . . : On
Select optimization control.
_ 1 . Start                        Version . . . . . . : 3.0.05
  * . Stop                         Tape date . . . . . : June 24, 2001
  3 . Shutdown
  * . Cancel Shutdown              VTAM Terminals identified by: CICS Termid

F1=Help  F2=Keys  F3=End  F4=Return  F6=Case  F9=Print
Copyrights (c) 1978-2001 BMC Software, Inc. as an unpublished licensed work.
```

Back Up the COPOPT File

Before you begin *any* installation procedures, make a backup copy of the COPOPT options file. The option file format changed with 3270 SUPEROPTIMIZER/CICS 2.0, maintenance level 9011. Because of this format change, the file is no longer downward compatible.

Product Libraries

Table 2-7 lists the product target libraries and distribution libraries that are allocated to SUPEROPT during installation. The installation system prompts you to type a high-level qualifier for the libraries.

Table 2-7   SUPEROPT Target and Distribution Libraries

Target Library	Distribution Library
BBACTDEF	ABBACTDF
BBCLIB	ABBCLIB
BBHELP	ABBHELP
BBILIB	ABBILIB
BBLINK	ABBLINK
BBMAC	ABBMAC
BBMLIB	ABBMLIB
BBPARM	ABBPARM
BBPLIB	ABBPLIB
BBPROF	ABBPROF
BBSAMP	ABBSAMP
BBSLIB	ABBSLIB
BBTLIB	ABBTLIB
BBUSER	ABBUSER
BBVDEF	ABBVDEF

SMP/E FMIDs

The following FMIDs are required for SUPEROPT.

Warning!   This list might be out of date. Every time you apply maintenance, check or rerun the list online to make it current.

- BBAAA20
- BBACM20
- BBAPW32
- BBNCF13
- BBNSF13

Data Set Allocation Jobs

> **Note:** Customize each job for the SUPEROPT release level that you are installing.

The following SUPEROPT data set allocation jobs are available in $B65ALOC:

- #@AALLOC
- #@MALLOC
- #@YALLOC

For more information about allocating and constructing product data sets with SMP/E, see the *OS/390 and z/OS Installer Guide*.

DDDEF Statement Members

The contents of the #@ADDDEF member and other members are copied in $B70DDEF. If you are using DDDEF statement members, the following DDDEF members are required to install SUPEROPT at your site:

- #@ADDDEF
- #@MDDDEF
- #@YDDDEF

Where to Go from Here

Install SUPEROPT in an MVS environment by using the OS/390 and z/OS Installer. For more information, see the *OS/390 and z/OS Installer Guide*. Install SUPEROPT in a VSE/ESA environment by using the VSO-labeled distribution tape. For more information, see the *3270 SUPEROPTIMIZER/CICS for VSE Installation Guide*.

When SUPEROPT has been installed, you must customize it to make the basic functions operational. Table 2-8 provides a summary of references for customizing the SUPEROPT product at your data center.

Table 2-8   Installation and Customization Situations

Situation	Reference
migrating from 3270 SUPEROPTIMIZER/CICS 1	contact BMC Software Customer Support
installing in an MVS environment	*OS/390 and z/OS Installer Guide*
	3270 SUPEROPTIMIZER/CICS Customization Guide
installing in a VSE/ESA environment	*3270 SUPEROPTIMIZER/CICS for VSE Installation Guide*
customizing SUPEROPT **Note:** You can use the AutoCustomization or the manual customization procedure. BMC Software recommends using AutoCustomization; it facilitates the installation process and helps to reduce errors.	Chapter 3, "Installation Customization"
	Chapter 5, "Optimization in Production"

Chapter 3   Installation Customization

This chapter describes how to customize SUPEROPT to make the basic functions operational by using one of the following methods:

- AutoCustomization (MVS environments only)
- manual customization

The chapter also includes additional customization considerations. This chapter contains the following sections:

Overview

When you have installed SUPEROPT, you must customize the product to make the basic functions operational by using one of the following processes:

• AutoCustomization

  AutoCustomization lets you perform the minimum required steps to make SUPEROPT operational.

• manual customization

  Manual customization lets you customize SUPEROPT to best suit your needs.

When you have completed customization, verify that the SUPEROPT functions are operational.

AutoCustomization

AutoCustomization lets you perform the minimum required steps to SUPEROPT make operational.

Note: AutoCustomization is not available when SUPEROPT is installed in a VSE/ESA environment.

AutoCustomization is an interactive, online ISPF dialog that is provided by BMC Software to customize installed BMC Software products. AutoCustomization minimizes mistakes, propagates information for shared customization steps, lets you browse steps before you perform them, and marks each step as it is completed. You can also bypass steps if you prefer to perform the steps manually.

Note: To get help at any time during AutoCustomization, type **HELP** on the **COMMAND** line or press the **F1** key.

When you have selected one or more products, AutoCustomization presents a comprehensive list of sequentially numbered steps that you must complete before the product is operational. The number of steps depends on the product. Most steps are optional, but some steps are required.

BMC Software recommends that you browse all of the steps and compile a list of questions or required information before selecting steps in AutoCustomization. By having all of the information in advance, you can answer the questions promptly and proceed through the AutoCustomization process in a more efficient manner.

Note: Although you can browse steps in any order, you cannot select them in any order. Each step *must* be selected, even if it is optional and will be bypassed. Because many steps share information that is given in previous steps, all steps must be selected and completed in the order given.

When all required steps are marked completed, the product is considered operational. When you return to the product list from the step list, the status of the product changes from UNMODIFIED to OPERATIONAL.

However, if you bypass any required steps in the list of numbered steps, then return to the product list, the status of the product is changed to INCOMPLETE; the product is not operational.

Verify that the SUPEROPT functions work properly by using the functions as described in the *3270 SUPEROPTIMIZER/CICS User Guide*.

Note: If you installed BMC Software products in multiple target and distribution zones, you must run AutoCustomization for each set of target libraries and distribution libraries.

To execute AutoCustomization, you must meet the following prerequisites:

- ISPF/PDF 2.3 or higher
- access authority

In an MVS environment, you can choose an online JCL generation procedure or a batch installation procedure. The online procedure requires the following items:

- TSO/E 1.4 or later
- ISPF 2 or later

Ensure write access to the following items:

- SYS1.PARMLIB
- JES procedure library (SYS1PROCLIB or equivalent)
- previously Authorized Program Facility (APF)-authorized load library
- SYS1.VTAMLST or equivalent for MAINVIEW Alternate Access

Figure 3-1 shows the AutoCustomization process.

Figure 3-1   AutoCustomization
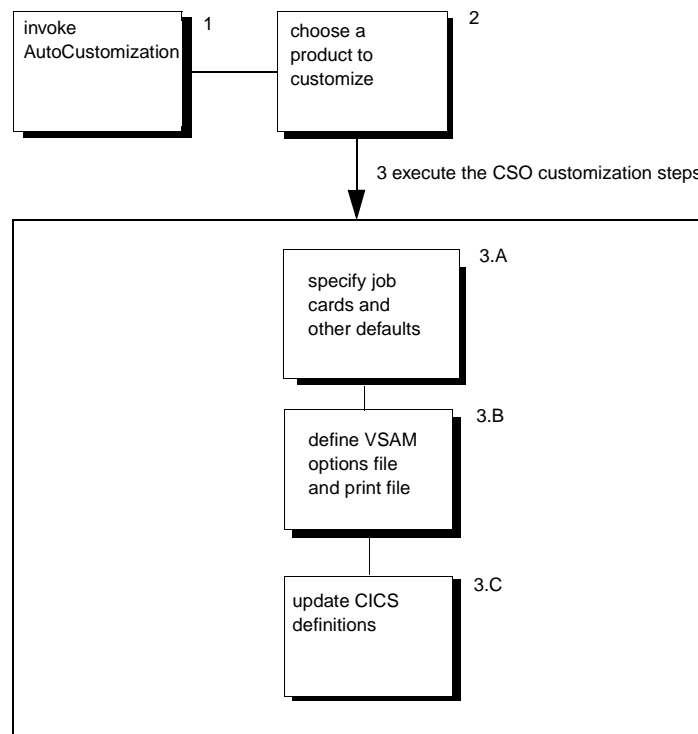
Task 1—Invoking AutoCustomization

Summary: In this task, you will invoke AutoCustomization.

AutoCustomization is executed online. You do not need to allocate any libraries or modify panels before invoking AutoCustomization. To invoke AutoCustomization, perform the following steps:

Step 1 On any ISPF panel **COMMAND** line, type the following command:

TSO EX '*hilevel*.BBCLIB(BBCUST)'

Step 2 Press **Enter**.

Step 3 Supply the high-level qualifier of your target libraries, as requested by AutoCustomization.

Step 4 Press **Enter**.

AutoCustomization displays the Product Customization menu (Figure 3-2 on page 3-6), where you can choose a product to customize.

Task 2—Choosing a Product to Customize

Summary: In this task, you will choose to customize SUPEROPT.

The Product Customization menu (Figure 3-2) lists your products and the status of each product. To choose to customize SUPEROPT, perform the following steps:

Step 1 Move the cursor to the left of the **SUPEROPTIMIZER CICS** product.

Step 2 Type **S**.

Step 3 Press **Enter**.

AutoCustomization invokes the Product Customization Steps panel for SUPEROPT (see Figure 3-3 on page 3-7).

Figure 3-2   Sample Product Customization Menu

```
BMC Software -------- PRODUCT CUSTOMIZATION ------------------ Row 1 to 6 of 6
COMMAND ===>                                            SCROLL ===> PAGE

Valid line command:                      Valid primary commands:
S - Select a product for customization   MAINT - Recustomize all products after
    (you may select more than one)               applying SMP maintenance
                                         HELP  - Display an overview of this
 Product                   Status                product customization dialog
------------------------------------------------------------------------------
  MAINVIEW ALARM           INCOMPLETE
  MAINVIEW FOR IP          OPERATIONAL
  MAINVIEW FOR VTAM        OPERATIONAL
  MAINVIEW INFRASTRUCTURE  OPERATIONAL
  SUPEROPTIMIZER CICS      OPERATIONAL
  ULTRAOPT                 OPERATIONAL
****************************** Bottom of data ********************************
```

Task 3—Executing the CSO Steps

Summary: In this task, you will execute the CSO customization steps.

Before You Begin

When you invoke AutoCustomization and access the Product Customization Steps panel for SUPEROPT, the product customization steps are displayed. Figure 3-3 shows the Product Customization Steps panel that is displayed for SUPEROPT (CSO).

Figure 3-3   Sample Product Customization Steps Panel

```
BMC Software -------- PRODUCT CUSTOMIZATION STEPS    --------- Row 1 to 3 of 3
COMMAND ===>                                              SCROLL ===> PAGE

Valid line commands:                                Status (S)    Flag (F)
S - Select a step (Must be selected in sequence)    -----------   ----------
B - Browse a step (No action is taken; step may     + completed   o optional
                  be browsed out of sequence)       - bypassed
Step S F  Description                                                  Product
------------------------------------------------------------------------------
  1  + o  Specify jobcards and other operational defaults                  CSO
  2  + o  Define VSAM Option File and Print File                           CSO
  3  + o  Define CICS definitions                                          CSO
****************************** Bottom of data *********************************
```

Steps are listed on the left side of the screen. To the right of each step number is the status indicator. The status of each step is indicated by a plus sign (+) for the steps that were completed during AutoCustomization, or by a minus sign (-) for a step that was bypassed. The status indicator is blank initially. The indicator changes to a minus sign if the step is selected but bypassed. The indicator changes to a plus sign when the step is completed.

To the right of the status indicator is a flag indicator (o) for optional steps.

On the far right of the screen is the Product step indicator. This indicator shows the steps that are product-specific (indicated by the product name abbreviation in the **Product** column).

Note: If you have not used AutoCustomization, or if you are unsure about a step, use the browse (B) line command to browse the step before selecting it. For more information, see "To Browse a Step" on page 3-9.

Each CSO step is described in Table 3-1. The panels for each step prompt you for specific customization information; Help is available when you press **F1**.

The step numbers from AutoCustomization might not match exactly the manual customization steps, but the activities of the steps should coincide and be similarly named. For more information about each step, see "Manual Customization" on page 3-10.

Table 3-1   AutoCustomization Steps

Step	Description
specify job cards and other defaults	(*optional*) lets you enter or modify the JOB card to be used for batch jobs that are created by AutoCustomization
define VSAM options file and print file	(*optional*) lets you create the VSAM files that are required for your SUPEROPT address space
update CICS definition files	(*optional*) lets you create CICS system definition (CSD) files

To Browse a Step

To obtain more information before selecting a step for installation, you can browse the step. You can browse steps in any order; no sequential restrictions exist.

To browse a step, perform the following steps:

Step 1   Move the cursor to the left of the step number that you want to browse.

Step 2   Type **B**.

Step 3   Press **Enter**.

A screen is displayed, containing information that is specific to that product. Each step might have several screens. Each screen contains questions about customizing the installation of the product.

To Select a Step

Selecting a step is different from browsing a step. Each step must be selected in sequential order. Because the information in one step might be used in a following step, you must complete each step before continuing to the next.

To select a step, perform the following steps:

Step 1   Move the cursor to the left of the step that you want to select.

Step 2   Type **S**.

Step 3   Press **Enter**.

When the step has been completed (or bypassed), AutoCustomization returns to the list of steps. The status of the step that you selected is updated to reflect whether the step was completed or bypassed.

To Exit AutoCustomization

You might need to exit AutoCustomization before completing the installation of a product. The status of each step remains as you left it until you resume AutoCustomization. The status of the product on the Product Customization menu changes to INCOMPLETE.

When all required steps are marked completed, the product is considered operational, and the status of the product changes from UNMODIFIED to OPERATIONAL.

Manual Customization

You can customize the SUPEROPT online environment automatically by using the AutoCustomization procedures that are described in "AutoCustomization" on page 3-2.

Note: When you install SUPEROPT in a VSE/ESA environment, you must customize the SUPEROPT environment manually.

This section describes the steps that are required for customizing the environment manually. Optimizer options can be set (and reset) from the online Monitor. They can also be set (and reset) by running COPBSET, the BMC Software batch Set Options program. Before you preset the options, you might want to complete some of all of the optional installation tasks that are described in this section.

To execute manual customizations, you must have access authority.

Verify that the SUPEROPT functions work properly by using the functions as described in the *3270 SUPEROPTIMIZER/CICS User Guide*.

Figure 3-4 shows the manual customization process.

Figure 3-4   Manual Customization
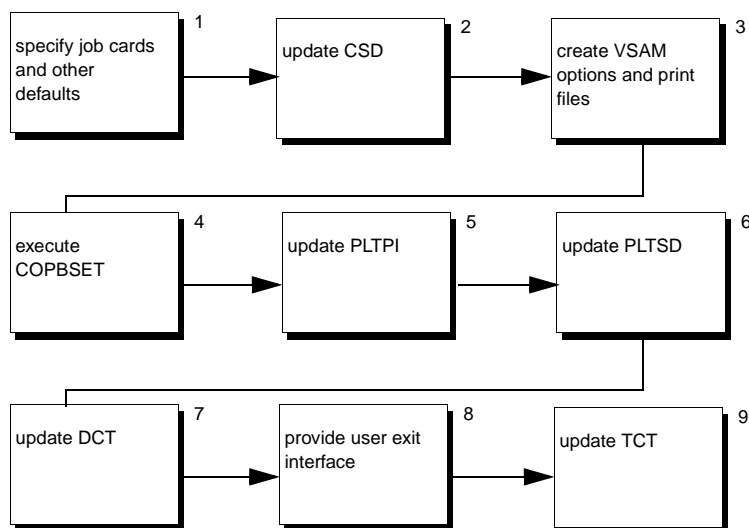
Table 3-2 briefly describes each step in the manual customization process. The Data Set Member column names the MVS data set member containing the sample JCL that is included on the tape. These samples are in the *hilevel*.BBSAMP data set on the tape, but you can specify a different high-level qualifier when you write the JCL to unload the tape.

If you are customizing SUPEROPT in a VSE/ESA environment, the VSE/ESA Book column names the VSE/ESA book containing the sample JCL, which is in the source statement source library that you specified when you unloaded the VSO-labeled tape.

Table 3-2   Summary of Manual Customization Process

Task	Description	Data Set Member	VSE/ESA Book
1	(required) Specify job cards and other operational defaults.	NA	NA
2	(required) Update the CICS system definition files.	CSOCICS	COPCSD4V
3	(optional/recommended) Create a VSAM options file for SUPEROPT.	CSOVSAM	COPVSMD1 COPVSMD2
	(optional/recommended) Create a VSAM print file for SUPEROPT.		
4	(optional) Execute the COPBSET program.	COPBSET	COPBSET
5	(optional) Update the program list table startup.	COPPLTPI	COPPLTPI
6	(optional) Update the program list table shutdown.	COPPLTSD	COPPLTSD
7	(optional) Update the destination control table.	COPDCT COPDCTL	COPDCT COPDCTL
8	(optional) Provide a user exit interface.	COPUSER	COPUSER
9	(optional) Update the terminal control table.	NA	NA

You might have to edit certain lines in these jobs to conform to the requirements of your system, especially if you use Storage Management Subsystem (SMS). Sometimes SMS has a problem with the jobs that create the VSAM options files (CSOVSAM).

To complete customization, you must perform the following required tasks:

• define transaction resources
• define program resources

Repeat each required task for every CICS system on which SUPEROPT is being installed. When you have completed these tasks, you can start the Optimizer *or* you can complete optional tasks 3 through 9.

Task 1—Specifying Job Cards and Other Operational Defaults

Summary: In this task, you will specify job cards and other operational defaults.

This task is required. In the customization steps for data set allocations, you are instructed to specify the volume serial ID and unit type. In other steps, you are asked to supply the high-level qualifier (*hilevel*) for the product libraries.

For VSE/ESA environments, you must specify the source statement library that you specified when you unloaded the VSO-labeled tape.

To specify job cards and other operational defaults, write down the volume ID and the unit type for the product libraries. Table 3-3 lists the items that are requested; you can write the values in the Value column.

Table 3-3   Information for Product Libraries

Item	Description	Value
Prefix	high-level qualifier that was used	
Unit-P	generic unit name for permanent data sets	
VOLSER	volume ID for permanent data sets	
SDFHLOAD	data set name of the CICS STEPLIB	
DFHCSD	data set name of the CICS system definition file	

Task 2—Updating the CICS System Definition File

Summary: In this task, you will update the CSD file.

This task is required.

Before You Begin

The following information can be updated by using the sample JCL that is provided in *hilevel*.BBSAMP(CSOCICS):

- define program resources
- define transaction resources
- create files entries for the VSAM options file (COPOPT)
- create file entries for the VSAM print file (COPRINT)

Note: Defining the COPOPT and COPRINT file entries is optional. If you do not define the COPOPT and COPPRINT file entries, changes that you make in the Monitor are not saved.

For VSE/ESA environments, the information that can be updated is in the COPCSD4V book of the source statement library that you specified when you unloaded the VSO-labeled tape.

Program Resources

The program processing table (PPT) statements are contained in member CSOCICS of *hilevel*.BBSAMP. Table 3-4 lists the PPT entries that are required for CICS. The language for the modules is CICS Assembler.

Table 3-4   Required PPT Entries

CICS Release	Required PPT Entry
all CICS releases	COPOPT
	COPOPTXA
	COPMON
	COPSHUT
	COPINIT
	COPMSG
CICS/VSE 2.3	COPOPT23
CICS/ESA 4.1	COPOPT41
CICS/TS 1.1	COPOPT51
CICS/TS 1.2	COPOPT52
CICS/TS 1.3 or later	COPOPT53
CICS/VSE TS 1.1	COPOPT41

The remaining entries in the sample PPT could be required, depending on which *optional* installation tasks you have completed. (Each optional installation task contains a note if it requires an entry in the PPT.)

Table 3-5 lists the PPT entries that could be required by your site if the indicated optional activities are completed during installation.

Table 3-5   Additional PPT Entries

PPT Entry	Activity	Reference
DFHPLTxx	A CICS PLT program is added to start the Optimizer.	Chapter 4, "Optimizer Startup"
DFHPLTxx	A CICS PLT program is added to stop and/or shut down the Optimizer from the Monitor.	*3270 SUPEROPTIMIZER/CICS User Guide*
COPSHUT	A CICS PLT program is to be used to shut down the Optimizer, and the Transid that is used to shut down CICS is something other than CEMT or CSMT.	*3270 SUPEROPTIMIZER/CICS User Guide*

Transaction Resources

The Transid statements are also contained in member CSOCICS of *hilevel*.BBSAMP. The following Transids are available:

- COPA
- COPI
- COPM
- COPP
- COPQ
- COPR
- COPS
- COPT
- COPX

All Transids except COPA and COPM are for the Optimizer's internal use only. If you enter any other Transids from a terminal, an error message is displayed.

Only two transactions are *required* to run the product:

- COPM, for the CICS transaction ID to start the Monitor
- COPS, for shutdown during CICS shutdown, or to shut down the Optimizer from the Monitor

Monitor transactions *cannot* be remote. You can add the remaining Transids as appropriate for your site. For more information, see Table 3-5 on page 3-14.

You can change the Transids to meet site standards. However, if you change one transaction, you must change all transactions. The Optimizer saves the first three characters of the Transid in the COPOPT options file the first time that the Optimizer is started. The only way you can change these Transid characters is to change the COPOPT file and restart the Optimizer.

If you change the Transids, you must perform one of the following tasks:

- bring CICS down, and delete, redefine, and reinitialize the COPOPT file
- shut down the Optimizer, and delete, define, and initialize the COPOPT file

Requirements for COPM Transid

Observe the following requirements for COPM Transid:

- The Transid *must* be three or four characters.
- The Transid cannot end in the letters *A*, *P*, *Q*, *R*, *S*, *T*, or *X*.

The Monitor can exploit the alternate screen size of terminals that are larger than 24 lines by 80 characters. To use this feature, define the COPM transaction as follows:

    SCRNSZE=ALTERNATE

Requirements for COPS Transid

Observe the following requirements for COPS Transid:

- The Transid *must* end with the letter *S*.
- The Transid *must* be four characters.
- The first three characters *must* match the first three characters of the COPM Transid.

Note: CICS will issue a warning message at program control table (PCT) assembly time for any Transids that start with *C*.

Optional Transid Definitions

The following optional transactions might be appropriate for your site:

- CICS online product authorization
- printing and resetting statistics at intervals
- printing at time of trace
- starting with a sequential terminal
- Transid security

CICS Online Product Authorization

The transaction COPA provides an interface for MVS and VSE/ESA environments that create product authorization JCL for processing CPU IDs and passwords. After you create the JCL, you must submit a batch job to process the product authorization codes.

The COPA transaction can be changed to any valid CICS transaction name. If you are using existing CICS transaction and program definition groups, the following entries must be added:

Note: COPA transaction definition must point to COPPSWDM or COPPSWDV.

Name	Program Definition
COPPSWDM	MVS
COPPSMM	MVS
COPPSWDV	VSE/ESA
COPPSMV	VSE/ESA

These definitions are supplied in the CSOCICS member of the BBSAMP library. For VSE/ESA environments, these definitions are supplied in the COPCSD4V book of the source statement library.

At Intervals Option

If your site intends to use the At Intervals option to print or reset statistics, you must define the COPP, COPQ, and COPR Transids.

If you want to change the Transids, observe the following requirements:

• The first three characters *must* match the first three characters of the COPM Transid.

• The Transids *must* be four characters.

• One Transid *must* end in *P*, another Transid *must* end in *Q*, and the third Transid *must* end in *R*.

Note: The At Intervals options are displayed on the Monitor panels for printing or resetting statistics. For more information, see the "How to Print and Reset Statistics" topic in the *3270 SUPEROPTIMIZER/CICS User Guide*.

At Time of Trace Option

If your site intends to use the At Time of Trace option to print the trace, a COPT Transid entry in the PCT is necessary. For more information, see the *3270 SUPEROPTIMIZER/CICS User Guide*.

To change the COPT Transid, observe the following requirements:

- The first three characters *must* match the first three characters of the COPM Transid.

- The Transid *must* be four characters.

- The Transid *must* end with *T*.

Sequential Terminals

If your site intends to start the Optimizer with a sequential terminal, a COPI Transid entry in the PCT is necessary.

To change the COPI Transid, observe the following requirements:

- The first three characters *must* match the first three characters of the COPM Transid.

- The Transid *must* be four characters.

- The Transid must end with the letter *I*.

Transid Security

If your site has a security package that provides Transid protection, and you will be using the Monitor to print screens or a trace on a printer, you might want to add a COPX Transid for printing. This PCT entry lets you have security on the first Transid, COPM.

To change the COPX Transid, observe the following requirements:

- The first three characters *must* match the first three characters of the COPM Transid.

- The Transid *must* be four characters.

- The Transid *must* end with the letter *X*.

COPOPT and COPRINT File Entries

SUPEROPT has two optional file control table (FCT) entries—COPOPT (the VSAM options file) and COPRINT (the VSAM print file). You might want to create these files for your site. These files enhance certain options. The files are independent of one another, so one or both files can be used.

BMC Software recommends that you create these files for your site. If you do not define the files, changes you make in the Monitor are not saved.

To use either file, you must perform the following actions:

• add the appropriate entries to your CSD definitions
• allocate one or both files

COPOPT File Entry

If you intend to change any of the Monitor options and want to save the changed options across CICS initializations, you must have a COPOPT file entry.

You can save Monitor options for optimization, data stream traces, and statistics. These options are described in the *3270 SUPEROPTIMIZER/CICS User Guide.* If the default options are satisfactory, this file entry is not necessary.

If you try to start the Optimizer when the COPOPT file is closed for any other reason, such as defining the COPOPT file as OPEN,DEFERRED, the Optimizer will *not* start.

To change certain options *and* retain the new settings the next time that CICS is initialized, create the COPOPT VSAM file. The Monitor panels display options for the following items:

• optimization control
• Imaging and Input Suppression
• SCS printer, program tab (PT) generation, and SNA data compression
• conventional and Imaging features
• user exits
• dynamic terminal areas
• storage allocation
• data stream exclusion statistics
• fixed and wraparound data stream tracing
• statistics

For more information about these options, see the *3270 SUPEROPTIMIZER/CICS User Guide*.

The DDNAME or DTFNAME of this file *must* be COPOPT.

Note: The COPOPT file can be used in a read-only mode, which allows multiple CICS systems to share the same file. However, updates made through the Monitor will *not* be saved.

Read-only mode fails if the options file has not been updated at least once through CICS.

COPRINT File Entry

To use a VSAM file as the destination for one of the Monitor print options, you must have a COPRINT entry in the FCT. To use separate files for the print options, duplicate the entry but provide different values for the DDNAME or DTFNAME designations. The name COPRINT is not required. You can change the print file name to suit your site if you use the same COPRINT file definition.

If you intend to use any Monitor option that routes the trace output to a VSAM file for later retrieval, or for statistics, create the COPRINT VSAM file. The Monitor panels display options for the following items:

- fixed and wraparound data stream tracing
- printing or resetting statistics

For more information about these options or other print options, see the *3270 SUPEROPTIMIZER/CICS User Guide*.

The DDNAME or DTFNAME is not restricted to COPRINT. Use a name that suits your site. Type the name that was chosen in the **VSAM File ID** field on the Monitor panels.

Note: To maintain data set integrity, create one VSAM file (for each type) for each separate CICS system.

REUSE Option

The REUSE option lets you use the EMPTYREQ option of the CEMT command to empty the COPRINT file after you have copied or printed the information that you have captured. For example, to close the file, type the following information:

CEMT SET FI(COPRINT) CLO EMPTYREQ

When you want to reopen the file, type the following information:

CEMT SET FI(COPRINT) OPE

The information in the COPRINT file will be removed because the high-used relative byte address (RBA) pointer is reset to zero.

Note: If the REUSE option is *not* used, you must delete/define the data set.

MRO Installations

If you use the VSAM options (COPOPT) and/or print (COPRINT) files and start the Optimizer with a PLTPI, the files *must be local*. If the VSAM files are remote, a U601 abend will result. This is a CICS restriction. If a PLTPI is not used, both files can be remote.

To Update the CSD File

Step 1 Select *hilevel*.BBSAMP(CSOCICS).

Step 2 To customize CSOCICS, follow the instructions at the top of the CSOCICS member.

A sample of the member for MVS environments is shown in Figure 3-5.

Figure 3-5   **Sample BBSAMP Member CSOCICS**

```
//STEP1    EXEC PGM=DFHCSDUP,REGION=1000K
//STEPLIB  DD    DSN=YOUR.CICS.SDFHLOAD,DISP=SHR  *** CHANGE ***
//DFHCSD   DD    DSN=YOUR.CICS.DFHCSD,DISP=SHR    *** CHANGE ***
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
DEFINE  FILE(COPOPT) GROUP(BMCCSO)
            DESCRIPTION(SUPEROPT OPTIONS FILE)
            DSNAME(?BBCHILV.BMC.CSO.COPOPT)
            LSRPOOLID(1) DSNSHARING(ALLREQS)
            STRINGS(2)
            STATUS(ENABLED) OPENTIME(FIRSTREF)
            DISPOSITION(SHARE) DATABUFFERS(4)
            INDEXBUFFERS(2) TABLE(NO)
            RECORDFORMAT(V) ADD(YES) BROWSE(NO)
            DELETE(NO) READ(YES) UPDATE(YES)
            JOURNAL(NO) JNLREAD(NONE)
            JNLSYNCREAD(NO) JNLUPDATE(NO)
            JNLADD(NONE) JNLSYNCWRITE(YES)
            RECOVERY(NONE) FWDRECOVLOG(NO)
            BACKUPTYPE(STATIC)
*
DEFINE  FILE(COPRINT) GROUP(BMCCSO)
            DESCRIPTION(SUPEROPT PRINT FILE)
            DSNAME(?BBCHILV.BMC.CSO.COPRINT)
            LSRPOOLID(1)
            DSNSHARING(ALLREQS) STRINGS(2)
            STATUS(ENABLED) OPENTIME(FIRSTREF)
            DISPOSITION(SHARE) DATABUFFERS(4)
            INDEXBUFFERS(2) TABLE(NO)
            RECORDFORMAT(V) ADD(YES)
            BROWSE(NO) DELETE(NO) READ(NO)
            UPDATE(NO) JOURNAL(NO) JNLREAD(NONE)
            JNLSYNCREAD(NO) JNLUPDATE(NO) JNLADD(NONE)
            JNLSYNCWRITE(YES) RECOVERY(NONE)
            FWDRECOVLOG(NO)
            BACKUPTYPE(STATIC)
*
DEFINE PROGRAM(COPHELP) GROUP(BMCCSO) LANGUAGE(ASSEMBLER) RELOAD(NO)
DESCRIPTION(BMC SUPEROPTIMIZER)
RESIDENT(NO) USAGE(NORMAL) USELPACOPY(NO)
STATUS(ENABLED) CEDF(YES)  DATALOCATION(ANY)
EXECKEY(CICS)
*
DEFINE PROGRAM(COPINIT) GROUP(BMCCSO) LANGUAGE(ASSEMBLER) RELOAD(NO)
DESCRIPTION(BMC SUPEROPTIMIZER)
RESIDENT(NO) USAGE(NORMAL) USELPACOPY(NO)
STATUS(ENABLED) CEDF(YES)  DATALOCATION(ANY)
EXECKEY(CICS)
*
```

A sample of the book for VSE/ESA environments is shown in Figure 3-6 on page 3-23.

Figure 3-6   Sample Source Statement Library Book COPCSD4V

```
*  JOB CSDJOB JOB TO EXECUTE DFHCSDUP
*  DLBL USERCAT,'USERCAT',,VSAM
*  DLBL DFHCSD,'USER.DFHCSD',,VSAM,CAT=USERCAT
*  LIBDEF PHASE,SEARCH(USER.LIBRARY,PRD1.BASE)
*  EXEC DFHCSDUP,SIZE=DFHCSDUP,PARM='CSD(READWRITE)'
*
DELETE GROUP(BMCCSO)
*
DEFINE  FILE(COPOPT) GROUP(BMCCSO)
DESCRIPTION(SUPEROPT OPTIONS FILE)
DSNAME(HLQ.COPOPT)
LSRPOOLID(1) DSNSHARING(ALLREQS)
STRINGS(2)
STATUS(ENABLED) OPENTIME(FIRSTREF)
DATABUFFERS(4)
INDEXBUFFERS(2) TABLE(NO)
RECORDFORMAT(V) ADD(YES) BROWSE(NO)
DELETE(NO) READ(YES) UPDATE(YES)
JOURNAL(NO) JNLREAD(NONE)
JNLSYNCREAD(NO) JNLUPDATE(NO)
JNLADD(NONE) JNLSYNCWRITE(YES)
RECOVERY(NONE) FWDRECOVLOG(NO)
*
DEFINE  FILE(COPRINT) GROUP(BMCCSO)
DESCRIPTION(SUPEROPT PRINT FILE)
DSNAME(HLQ.COPRINT)
LSRPOOLID(1)
DSNSHARING(ALLREQS) STRINGS(2)
STATUS(ENABLED) OPENTIME(FIRSTREF)
DATABUFFERS(4)
INDEXBUFFERS(2) TABLE(NO)
RECORDFORMAT(V) ADD(YES)
BROWSE(NO) DELETE(NO) READ(NO)
UPDATE(NO) JOURNAL(NO) JNLREAD(NONE)
JNLSYNCREAD(NO) JNLUPDATE(NO) JNLADD(NONE)
JNLSYNCWRITE(YES) RECOVERY(NONE)
FWDRECOVLOG(NO)
*
DEFINE MAPSET(COPMAP) GROUP(BMCCSO) RESIDENT(NO) USAGE(NORMAL)
DESCRIPTION(BMC SUPEROPTIMIZER)
 STATUS(ENABLED)
*
DEFINE PROGRAM(COPHELP) GROUP(BMCCSO) LANGUAGE(ASSEMBLER) RELOAD(NO)
DESCRIPTION(BMC SUPEROPTIMIZER)
RESIDENT(NO) USAGE(NORMAL)
STATUS(ENABLED) CEDF(YES)  DATALOCATION(ANY)
EXECKEY(CICS)
*
DEFINE PROGRAM(COPINIT) GROUP(BMCCSO) LANGUAGE(ASSEMBLER) RELOAD(NO)
DESCRIPTION(BMC SUPEROPTIMIZER)
RESIDENT(NO) USAGE(NORMAL)
STATUS(ENABLED) CEDF(YES)  DATALOCATION(ANY)
EXECKEY(CICS)
*
DEFINE PROGRAM(COPMON) GROUP(BMCCSO) LANGUAGE(ASSEMBLER) RELOAD(NO)
DESCRIPTION(BMC SUPEROPTIMIZER)
RESIDENT(YES) USAGE(NORMAL)
STATUS(ENABLED) CEDF(YES)  DATALOCATION(ANY)
EXECKEY(CICS)
```

Step 3   Save your changes.

Step 4   Submit the job.

Task 3—Defining the VSAM Options File and Print File

Summary: In this task, you will define the VSAM options file and print file.

To define the VSAM options file and print file, perform the following steps:

Step 1 Select *hilevel*.BBSAMP(CSOVSAM).

For VSE/ESA environments, the JCL is in book COPVSMD1 and book COPVSMD2.

Step 2 To customize CSOVSAM, follow the instructions at the top of the CSOVSAM member.

A sample of the CSOVSAM member is shown in Figure 3-7.

Figure 3-7   **Example of the BBSAMP Member CSOVSAM**

```
        DELETE ?BBCHILV.COPOPT CLUSTER
        DELETE ?BBCHILV.COPRINT CLUSTER
        DEFINE CLUSTER (NAME(?BBCHILV.COPOPT) -
               VOLUMES(111111)    /* <---------CHANGE  */ -
               RECORDS(10,5) -
               NUMBERED -
               UNIQUE   -
               CONTROLINTERVALSIZE(4096) -
               RECORDSIZE(4084,4084)) -
               DATA (NAME(?BBCHILV.COPOPT.DATA))
        REPRO INFILE(INITIAL) -
               OUTDATASET(?BBCHILV.COPOPT)
        DEFINE CLUSTER (NAME(?BBCHILV.COPRINT) -
               VOLUMES(111111)    /* <---------CHANGE  */ -
               UNIQUE           -
               RECORDS(500,500) -
               NONINDEXED -
CONTROLINTERVALSIZE(4096) -
               RECORDSIZE(3440,3440)) -
               DATA (NAME(?BBCHILV.COPRINT.DATA))
```

Step 3 Save your changes.

Step 4 Submit the job.

Task 4—Executing the Batch Set Options Program

Summary: In this task, you will execute the batch Set Options (COPBSET) program.

This task is optional. Usually, it is not necessary to run COPBSET unless you want to preset Optimizer options before the Optimizer is started. You can also run this batch program when you do not want to set options through the Monitor.

Before You Begin

The batch Set Options program COPBSET changes options in the COPOPT options file, according to the parameters that are specified in your batch JCL. Some of these options can also be set through the Monitor, while other options are available only through execution of COPBSET.

Some options can be set in batch only. Most of these options should be set under the direction of BMC Software Customer Support only.

Note: The Optimizer must be shut down when the batch Set Options program is executed.

Table 3-6 lists options that can be changed on the Monitor panels.

Table 3-6   **Monitor Panel Options That Can Be Changed**

Panel	Option Controlled Through the Monitor
Initialization Options	change • CICS Termid (default) • VTAM Netname
option 1.1.1	turn on or turn off Global Optimization Control • CRTs • printers
options 1.2.1 and 1.2.2	turn on or turn off • Imaging for CRTs • Imaging for printers • Input Suppression • Erase Input Key Allowed
option 1.3.1	turn on or turn off SCS Printer Optimization
options 1.6.1 and 1.6.2	change • Allocation size for Imaging and SCS storage • Data stream storage size for work area storage • 3270 buffer storage size for work area storage
option 1.6.3	change • Reuse storage for Dynamic Terminal Areas • Number allocated for Dynamic Terminal Areas and Transid Statistic Areas

The option to display text on the Monitor panels in uppercase characters or mixed-case characters is not available from the Monitor panels.

DISPLAY UPPER/LOWER is the default option.

For example, if DISPLAY UPPERCASE is specified, the words *SCS Horizontal Tabs* are displayed as SCS HORIZONTAL TABS. This option *does not* apply to the **F6=Case** function key. This key affects the data that a terminal operator enters.

Guidelines for Using the Batch Set Options Program

Adapt the control statements in Table 3-7 to your site. Observe the following guidelines:

- If you have specified a password through the Monitor, include the PASSWORD control statement, followed by your password. You must provide this entry to set the options only if you have an existing COPOPT options file. The PASSWORD control statement does not create a password for the Monitor.

- To use the default options, specify only DEFAULT OPTIONS. The DEFAULT OPTIONS control statement overrides all other options.

- IMAGING STORAGE can be 0 to 2097144 for MVS/ESA, OS/390, and z/OS environments.

Set Options Program Control Statements

Table 3-7 lists the control statement syntax for the COPBSET Set Options program. The default setting for the option is underlined.

Table 3-7   Control Statements for COPBSET (Part 1 of 2)

Control Statements	Notes
PASSWORD=xxxxxxxx	Include this statement only if you have previously set a password for the Monitor. This statement does not create a password; it only verifies that you are authorized to change the COPOPT file.
DEFAULT OPTIONS	This control statement overrides all other options.
OPTIMIZER (<u>ON</u>|OFF) CRTS OPTIMIZER (<u>ON</u>|OFF) PRTS IMAGING (<u>ON</u>|OFF) CRTS IMAGING (<u>ON</u>|OFF) PRTS INPUT (<u>ON</u>|OFF) ERASE INPUT (<u>NO</u>|YES) SCS (<u>ON</u>|OFF) NETNAME (<u>OFF</u>|ON) REUSE (<u>NO</u>|YES) IMAGING STORAGE=xxxxxxx DATA STREAM STORAGE=xxx 3270 BUFFER=xx DYNAMIC TERMINALS=xxxxx	These options can also be set through the Monitor panels.

Table 3-7   Control Statements for COPBSET (Part 2 of 2)

Control Statements	Notes
DISPLAY (<u>UPPER/LOWER</u>|UPPERCASE)	This option can be changed in batch only.
IMAGING SO/SI (<u>ON</u>|OFF) SCS LOCAL-COPY (<u>OFF</u>|ON) SCS MIX SHFNL (<u>OFF</u>|ON) (<u>KEEP</u>|DISCARD) USER SCS SHF VIRTUAL SNA (<u>OFF</u>|ON) ENHANCE READB (<u>OFF</u>|ON) BUFFER WRAP (<u>ON</u>|OFF) TRACE SUPPORT (<u>ON</u>|OFF) SCS NULLS (<u>VALID</u>|INVALID) (<u>GENERATE MF ORDER</u>|GENERATE NO MF ORDER) TRANSIENT DATA ID=	These options are available only under the direction of BMC Software Customer Support.

To Execute the COPBSET Program

> **Note:** To execute the batch Set Options program, the Monitor must be shut down.

Step 1   Select *hilevel*.BBSAMP(COPBSET).

Step 2   Adapt the JCL for your site.

Figure 3-8 provides sample JCL to execute the Set Options program. To set the options, use the information in Table 3-7 on page 3-27 as the SYSIN input.

Figure 3-8   Sample JCL to Execute COPBSET Batch Set Options Program

```
//CSOBSET  JOB (ACCOUNT),'NAME'
//BSET    EXEC PGM=COPBSET
//STEPLIB  DD DSN=BMC.CSO.LOAD,DISP=SHR
//COPOPT   DD DSN=BMC.CSO.COPOPT,DISP=SHR   COPOPT VSAM FILE
//SYSPRINT DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//SYSIN    DD *
PASSWORD=ABCDEFGH
IMAGING OFF CRTS
SCS OFF
/*
```

Step 3   Submit the job.

Task 5—Updating the Program List Table Program Initialization Assembly

Summary: In this task, you will update the program list table program initialization (PLTPI) assembly.

This task is optional. To start the Optimizer from the CICS program list table program initialization (PLTPI), you must update the PLTPI. When you start the Optimizer from the PLTPI, a WTO message is sent to the operator's console (MVS only) and to the programmer's log.

To start the Optimizer from the PLTPI, perform one of the following tasks:

- Add an entry for the COPINIT program to an existing PLTPI or create a new PLTPI.

  If a new PLTPI is created, you must add an entry for the PLTPI to the PPT.

- If you have other programs that use the CICS terminal control exits, add two DFHPLT TYPE=ENTRY statements for COPINIT. Place one statement *before* your program list table (PLT) program statements and the other statement *after* your PLT program statements.

  Your PLT program entries *must* be added between the two COPINIT entries, because of the following reasons:

  — The Optimizer input exit must be invoked *before* all other terminal exit programs.

  — The Optimizer output exit must be invoked *after* all other terminal exit programs.

The sample PLTPI statement is contained in member/book COPPLTPI of *hilevel*.BBSAMP:

```
DFHPLT TYPE=ENTRY,PROGRAM=COPINIT
```

Note: If you have CICS/ESA or later, place the COPINIT entries after the entry for DFHDELIM in the PLT startup.

Task 6—Updating the Program List Table Shutdown Assembly

Summary: In this task, you will update the program list table shutdown (PLTSD) assembly.

This task is optional. The COPSHUT program processes statistics for the Optimizer at shutdown. If you intend to print or reset statistics at CICS shutdown, you *must* update the program list table shutdown (PLTSD) assembly with an entry for the COPSHUT program.

A COPSHUT entry is required under the following conditions:

- when you want to print or reset statistics at shutdown or at intervals for your site

   Individual transaction and terminal statistics are not maintained across CICS warm starts. Only summary statistics are maintained.

- when you want to maintain accurate statistics across CICS warm starts for your site

   This condition applies only if your site warm-starts CICS Interval Control. For more information about printing screens and resetting statistics, see the *3270 SUPEROPTIMIZER/CICS User Guide*.

- when the Optimizer is shut down and is still quiescing when a CICS shutdown is performed

   The PLTSD entry lets you stop any Optimizer WAITs that are outstanding. When the Optimizer is shut down from a PLTSD, a WTO message is sent to the operator's console (MVS only) and to the programmer's log.

Place the COPSHUT entry *before* the DFHDELIM entry in the PLTSD if the following conditions apply:

- The COPOPT or COPRINT files are remote.
- You want to print statistics to a 32*xx* printer.
- You are using CICS/ESA or later.

To Update the PLTSD Entry

The sample PLTSD entry is contained in member/book COPPLTSD of *hilevel*.BBSAMP:

```
DFHPLT TYPE=ENTRY,PROGRAM=COPSHUT
```

For CICS to execute a PLTSD at CICS shutdown, the IMMEDIATE keyword for CEMT or CSMT must *not* be used.

To Print on VTAM Printers at CICS Shutdown

To print on a VTAM printer at CICS shutdown, the printer *must be* bound to CICS. The only *certain* way to do this is to specify the following entries in the terminal control table (TCT):

```
CONNECT=AUTO
```
 (*not* the default)

```
RELREQ=(NO,NO)
```
 (default)

You *must also place* an entry for DFHPLTSD in the program processing table (PPT).

If there is a problem with the printer (such as running out of paper), CICS will not shut down. Manual intervention is then required to shut down CICS.

Task 7—Updating the Destination Control Table

Summary: In this task, you will update the destination control table (DCT).

This task is optional. You can use one or both DCT entries. Neither entry is required. One entry supports the DCT print option. The other entry allows startup and shutdown status messages to be routed to a user-specified destination. Both entries can be remote.

Before You Begin

If you are creating a DCT, ensure that the transient data program is available to the CICS system. (The transient data program cannot be a *dummy* program.)

In a multiregion operation (MRO) system, any DCT entries that SUPEROPT uses can be remote.

To Update the DCT Entry for Printing

If you use a DCT ID as the destination for one of the Monitor print options, BMC Software recommends the CSSL DCT destination. If you do not use CSSL, provide another DCT entry and reassemble the DCT. A sample DCT entry is shown in Figure 3-9.

Figure 3-9   **Sample DCT Entry—Required for Printing to a DCT Destination**

```
COPD    DFHDCT TYPE=INDIRECT,      USED FOR DCT PRINT OPTION ON     *
               DESTID=COPD,        OPTION 3.4                       *
               INDDEST=CSSL        AND OPTION 9
```

In the Monitor, the print options are displayed on the panels for the following items:

- Option 9—Print or Reset Statistics to print statistics
- Option 3.4.0—Wraparound Data Stream Trace to print a wraparound data stream trace

For detailed information about print options, see the *3270 SUPEROPTIMIZER/CICS User Guide*.

To Update the DCT Entry for Startup and Shutdown Status Messages

The DCT entry shown in Figure 3-10 lets you specify a separate destination for Optimizer startup and shutdown status messages.

Figure 3-10   Sample DCT Entry—User-Specified DCT Destination for Messages

```
COPL    DFHDCT TYPE=INDIRECT,      USED FOR STARTUP AND SHUTDOWN    *
               DESTID=COPL,        STATUS MESSAGES                  *
               INDDEST=CSMT
```

If you do *not* want these messages routed to CSMT, modify the INDDEST=CSMT entry. Provide an alternate location that is convenient for reviewing the messages. If this destination is not defined to CICS, the status messages are routed to CSMT automatically.

Task 8—Providing a User Exit Program

Summary: In this task, you will provide a user exit interface.

This task is optional. User exit programs can be written for the Optimizer. They will be dynamically loaded (once), then called by the Optimizer at each exit point.

The following exit points are provided:

- Outbound Before Optimization
- Outbound After Optimization
- Inbound Before Optimization
- Inbound After Optimization
- Terminal Name Change

Outbound Before Optimization Exit

The Outbound Before Optimization exit can be used to preprocess output data streams. It can also be used to exclude/include output data streams from optimization by the Optimizer. If the program excludes a data stream, the Optimizer will bypass the data stream. If the program includes a data stream, all other selection criteria is bypassed, and the data stream is optimized.

This exit can also provide an opportunity to change optimization techniques or to exclude a portion of the data stream from optimization.

Outbound After Optimization Exit

The Outbound After Optimization exit can be used to insert or change in the data stream any data that is being transmitted to a device. Generally, this exit is not recommended for data stream processing. The optimized data stream becomes more complex than the original data stream, and the Optimizer cannot detect data stream errors that have been generated in the exit.

Inbound Before Optimization Exit

The Inbound Before Optimization exit can be used to remove from a data stream any non-3270 data that might have been inserted by hardware. It also provides the ability to correct data stream errors before the Optimizer processes the data stream.

Inbound After Optimization Exit

The Inbound After Optimization exit can be used to translate inbound data streams. You can insert or remove fields *if the data stream length does not exceed the size of the storage area that is provided*.

Terminal Name Change Exit

The Terminal Name Change exit can be used to change the name of the terminal.

To Provide a User Exit Program

All exit programs must be written in Assembler language, use standard linkage, and be reentrant. There are no restrictions on the program name. The same program can be used at all exit points. However, your user exit program must *not* request any operating system or CICS services.

If your operating system is MVS/ESA, OS/390, or z/OS and you are using the XA option of CICS, your user exit programs

- should be link-edited as AMODE(31) and RMODE(ANY)
- will receive control from the Optimizer in AMODE(31)
- should return to the Optimizer in AMODE(31)

On entry to a user exit program, the Optimizer passes the contents of the registers to the sample program as shown in Table 3-8.

Table 3-8 **Contents of Registers Passed to User Exit Interface Program (Part 1 of 2)**

Register	Contents when Passed to User Exit Interface Program	
13	contains the address of an 18 fullword save area	
14	contains the return address	
15	contains the entry point address	
1	points to a parameter list of fullwords that contains the addresses of the following items:	
	• exit identifier	identifies the exit for which the program is to be called The exit codes are as follows: 0—Terminal Name Change 4—Inbound Before Optimization 8—Inbound After Optimization 12—Outbound Before Optimization 16—Outbound After Optimization
	• TCTTE	Terminal Control Table Terminal Entry for the CICS terminal
	• CICS CSA	Common System Area (CSA) for data areas addressable by all address spaces This item is not valid for CICS 3.2.1 and later because IBM removed accessibility to the CSA for these versions.
	• data stream	points to the data stream buffer address This parameter does not apply to the Terminal Name Change exit.

Table 3-8 **Contents of Registers Passed to User Exit Interface Program (Part 2 of 2)**

Register	Contents when Passed to User Exit Interface Program	
1 (continued)	• fullword length of the data stream for the four inbound and outbound exits	Data stream length is the *entire* length of the data stream.
		For outbound exits, this length includes the lengths of the Command Code (if present) and the Write Control Character (if present).
		For inbound exits, the length includes the attention identifier (AID) and cursor address (if present).
		For the Terminal Name Change exit, the fullword is an address (8 bytes) of the Termid or the VTAM Netname.
	• optimization options	For the Outbound After exit, the fullword is an address that points to a skip reason code byte. If this byte contains X'FF', the data stream has not been skipped.
		For the Outbound Before exit, the fullword is an address that points to the optimization options that are to be used for this data stream.
	• fullword number	For the Outbound Before exit, the fullword is a number that indicates the number of bytes following the WCC that are to be retained in the optimized data stream.

Note: An entry for each user exit program *must* be added to the program processing table (PPT).

At return to the Optimizer, Register 15 should contain one of the values listed in Table 3-9 when writing the Outbound Before Optimization user exit program.

Table 3-9 **Register 15 Values for Outbound before Optimization User Exit**

Value	Description
zero	The Optimizer should honor normal exclude/include options.
any negative number	The data stream should be included for optimization, disregarding all other exclude/include options.
any positive number	The data stream should be excluded from optimization.

Task 9—Updating the Terminal Control Table Assembly

Summary: In this task, you will update the terminal control table (TCT) assembly.

Note: If you are using Autoinstall for terminals, skip this task.

This task is optional. To correctly optimize data streams, the Optimizer must determine the 3270 buffer size in effect for each terminal. This information is extracted by the Monitor from the TCT terminal entry (TYPE=TERMINAL). The information, which CICS and the Optimizer use, must accurately reflect the terminal hardware that is installed.

Definitions for Non-SCS Printers

Take particular care with non-SCS 3270 printers. IBM control units deviate from the SNA protocol by binding LUTYPE3 printers with the default physical buffer size of the device, 2 KB or 4 KB, instead of the value that is specified in the DEFSCRN value.

Because the Optimizer has no way to detect the actual buffer size of the printer in the host (CICS), the wraparound point cannot be determined. Consequently, the best optimization might not be obtained. To avoid this problem, define the DEFSCRN *and* the ALTSCRN parameters explicitly. The printer will be bound with the sizes that you specify.

You can display these parameter values by viewing the Fixed Data Stream Trace Environment panel. For more information about this topic, see the *3270 SUPEROPTIMIZER/CICS User Guide*.

BTAM Installations

A data stream that is bound to a basic telecommunications access method (BTAM) *local* terminal is excluded from Input Suppression if the INAREAL operand of DFHTCT TYPE=LINE is too small. The INAREAL value must be large enough to hold the *largest possible* inbound data stream. To ensure that Input Suppression is performed for BTAM local terminals, you might have to reassemble your TCT to increase the size of your INAREAL operands.

To Update the TCT assembly

Step 1 Use the following parameters in the TYPE=TERMINAL macro to define the 3270 buffer size:

- DEFSCRN—defines the default screen size
- ALTSCRN—defines the alternate screen size

For example, a 3270 model 4 can be defined as DEFSCRN=(24,80) and ALTSCRN=(43,80).

In the TCT assembly, the following default parameters are true:

- If DEFSCRN is undefined, the value that is associated with the TRMMODL operand is used.

- If TRMMODL is undefined, the terminal type defaults to model 1. This action sets the screen size to (12,40).

Step 2 To change any of these parameters, reassemble the TCT.

Additional Customization

This section describes additional customization considerations.

BBA9XBK0

Note: This customization applies to MVS environments only.

Because of enhancements to the security feature, and to avoid an S0C4 abend, perform one of the following tasks:

- Include the load library that contains SUPEROPT (*hilevel*.BBLINK) in your step library. To make the product operational, you must APF-authorize the load library and you must include the load library in your DFHRPL concatenation.

- Copy BBA9XBK0 from *hilevel*.BBLINK to an existing APF-authorized library in the CICS step library concatenation. To make the product operational, and you must also include *hilevel*.BBLINK in your DFHRPL concatenation.

Note: If you choose to copy BBA9XBK0, and maintenance is applied to *hilevel*.BBLINK, you must refresh the copy that is in the CICS step library.

Passwords

If you are upgrading from a previous version of SUPEROPT, a new password is not required. To continue using the same password, copy the CSOTBL3* load module from the old load library to the *hilevel*.BBLINK library. In the load module, * is T (temporary/trial password) or P (permanent password).

Chapter 4   Optimizer Startup

This chapter provides instructions for starting the Optimizer and using COPBPRINT to print screen data that is routed to a VSAM file.

This chapter contains the following sections:

Overview

When you have completed the installation and customization, you can start the Optimizer. Use any procedures that are explained in this section. Before you start the Optimizer, check the items in Table 4-1.

Table 4-1   Optimizer Options Checklist

X	Task	Action
	you want to change the default options	Perform one of the following actions: • Use the batch Set Options program COPBSET (supplied by BMC Software), if you have a COPOPT file. • Access the Monitor without starting the Optimizer. Set the options, then start the Optimizer.
	you want to retain the option changes you have made from the Monitor	Ensure that you have a COPOPT options file defined. If the COPOPT file has not been created, or is not available, any changes that you make to the Monitor are *not* retained after the Optimizer is shut down. To create a COPOPT file, see Chapter 3, "Installation Customization."
	the **Erase Input** key is used in your data center	Input Suppression might not work properly. Using the **Erase Input** key could adversely affect your screens and the database that contains the information that is updated by these screens.
	your site uses SCS printers, and they accept the horizontal tab control code	Ensure that Horizontal Tabs are turned on (default).

Erase Input Key

Note: This key may be labeled **ErInp**, **Erase Input**, or something similar, depending on the type of terminal keyboard used. Do *not* confuse the **Erase Input** key with the **Erase EOF** key.

If the **Erase Input** key is used, you can use options 1.2.1, 1.2.2, and 1.2.3 on the Monitor panels to perform the following tasks:

- exclude or include the necessary transactions from Input Suppression

- exclude or include Termids from Input Suppression

- turn *off* Input Suppression

- set Erase Input Key Allowed optimization to Yes

  This setting decreases inbound data stream optimization, but lets you use the **Erase Input** key.

- exclude/include the necessary transactions from **Erase Input Key Allowed** optimization

- exclude/include Termids from **Erase Input Key Allowed** optimization

The **Erase Input** key clears *all* unprotected fields to nulls and sets the corresponding modified data tag (MDT) bits *off*.

The **Erase EOF** key clears all characters in *one* unprotected field to nulls (from the location of the cursor to the end of the field) and sets the corresponding MDT bits *on*. This key may be labeled **Erase EOF** or something similar. The **Erase EOF** key can be used with Input Suppression.

Horizontal Tabs

If your site uses SCS printers, determine whether these printers support the horizontal formatting control codes. To help you determine whether horizontal tabbing is supported, review the following guidelines:

- Most IBM 3287 printers with a serial number that begins with the number *5* (or lower) do not support horizontal tabs.

- If your IBM 3287 printer has the Change Space Feature, it does *not* support tabbing. The Change Space Feature is indicated in the test pattern by a X'80' bit at Offset 52.

- Some non-IBM printers have a problem when the horizontal tab data is split across request/response units (RUs). Most printers have corrected the problem.

- Most PC ASCII printers do not support tabbing.

If horizontal tabs are not supported, exclude SCS printers from horizontal tabs by using option 1.3.2 to perform the following tasks:

- turn off Horizontal Tabs
- exclude or include a specific or generic Termid
- exclude or include a list of SCS printer Termids by creating a table

Start Methods

Table 4-2 lists methods for starting SUPEROPT.

Table 4-2   Methods to Start the Optimizer

Method	Action	Notes
use the CICS startup program list table (PLTPI)	Modify the CICS PLTPI to support this method. Add an Optimizer entry to your PLTPI as explained in Chapter 3, "Installation Customization."	BMC Software recommends this method for starting the Optimizer.
use a defined sequential terminal data set	Perform *one* of the following actions: • add the Transid that you specified in your PCT for COPINIT to an existing sequential terminal data set • create a new sequential input terminal data set.	Figure 4-2 on page 4-7 contains the generation parameters that are required for a sequential terminal. These parameters are also contained in member/book COPSEQ of *hilevel*.BBSAMP.
enter **COPM** or your Transid	When you access the Monitor for the first time, it displays the Monitor Initialization Options panel.	This method lets you set or reset options before starting the Optimizer. See the *3270 SUPEROPTIMIZER/CICS User Guide*. After the Monitor panels have been viewed, the Initialization Options panel will not display again unless the Optimizer has been shut down.

Sample Sequential Terminal Entries

Figure 4-1 contains sample entries for defining a sequential terminal to start the Optimizer in an MVS environment. These parameters are contained in *hilevel*.BBSAMP(COPSEQ).

Figure 4-1   Sample MVS Entries to Create a Sequential Terminal for CICS

```
        DFHSG PROGRAM=TCP,                              *00010000
              ACCMETH=(...,SAM),                        *00020000
              DEVICE=(DASD),                            *00030000
              ...                                        00040000
        DFHTCT TYPE=INITIAL,SUFFIX=SQ,                  *00050000
              APPLID=CICS,                              *00060000
              ERRATT=(LASTLINE,INTENSIFY),              *00070000
              RAMAX=1100,                               *00080000
              RAPOOL=10,                                *00090000
              ACCMETH=(VTAM,NONVTAM)                     00100000
        DFHTCT TYPE=SDSCI,                              *00110000
              DSCNAME=SEQIN,                            *00120000
              MACRF=R,            (OS   ONLY)           *00130000
              DEVADDR=SYS100,    (DOS ONLY)             *00140000
              DEVICE=DASD                                00150000
        DFHTCT TYPE=SDSCI,                              *00160000
              DSCNAME=SEQOUT,                           *00170000
              MACRF=W,           (OS   ONLY)            *00180000
              DEVADDR=SYS100,    (DOS ONLY)             *00190000
              DEVICE=DASD                                00200000
        DFHTCT TYPE=LINE,                               *00210000
              ACCMETH=SAM,                              *00220000
              ERRATT=NO,                                *00230000
              INAREAL=80,                               *00240000
              TRMTYPE=DASD,                             *00250000
              CLASS=CONV,                               *00260000
              ISADSCN=SEQIN,                            *00270000
              OSADSCN=SEQOUT                             00280000
        DFHTCT TYPE=TERMINAL,                           *00290000
              TIOAL=80,                                 *00300000
              TRMIDNT=SEQT,                             *00310000
              TRMSTAT=TRANSCEIVE,                       *00320000
              LASTTRM=LINE                               00330000
              ...                                        00340000
```

Figure 4-2 contains sample entries for defining a sequential terminal to start the Optimizer in a VSE/ESA environment. These parameters are contained in book COPSEQ of the source statement library.

Figure 4-2   Sample VSE/ESA Entries to Create a Sequential Terminal for CICS

```
DFHSG PROGRAM=TCP,                             *00010000
      ACCMETH=(...,SAM),                       *00020000
      DEVICE=(DASD),                           *00030000
      ...                                       00040000
DFHTCT TYPE=INITIAL,SUFFIX=SQ,                 *00050000
      APPLID=CICS,                             *00060000
      ERRATT=(LASTLINE,INTENSIFY),             *00070000
      RAMAX=1100,                              *00080000
      RAPOOL=10,                               *00090000
      ACCMETH=(VTAM,NONVTAM)                    00100000
DFHTCT TYPE=SDSCI,                             *00110000
      DSCNAME=SEQIN,                           *00120000
      MACRF=R,           (OS   ONLY)           *00130000
      DEVADDR=SYS100,    (DOS ONLY)            *00140000
      DEVICE=DASD                               00150000
DFHTCT TYPE=SDSCI,                             *00160000
      DSCNAME=SEQOUT,                          *00170000
      MACRF=W,           (OS   ONLY)           *00180000
      DEVADDR=SYS100,    (DOS ONLY)            *00190000
      DEVICE=DASD                               00200000
DFHTCT TYPE=LINE,                              *00210000
      ACCMETH=SAM,                             *00220000
      ERRATT=NO,                               *00230000
      INAREAL=80,                              *00240000
      TRMTYPE=DASD,                            *00250000
      CLASS=CONV,                              *00260000
      ISADSCN=SEQIN,                           *00270000
      OSADSCN=SEQOUT                            00280000
DFHTCT TYPE=TERMINAL,                          *00290000
      TIOAL=80,                                *00300000
      TRMIDNT=SEQT,                            *00310000
      TRMSTAT=TRANSCEIVE,                      *00320000
      LASTTRM=LINE                              00330000
      ...                                       00340000
```

Optimizer Status when the COPOPT File Exists

If the COPOPT file exists, and it is open and enabled, one of the following events occurs:

•   If the Optimizer was stopped before the last CICS shutdown, optimization remains inactive until you start it from the Primary Menu.

•   If the Optimizer was active before the last CICS shutdown, the Optimizer will be started.

Start Failures

The Optimizer will not start if you added an entry in the file control table (FCT) for COPOPT, *and* one of the following conditions exists:

- The VSAM COPOPT file is disabled. (For example, verification has not been performed.)

- The VSAM COPOPT file is defined but did not have an initialization record written to it.

- The VSAM COPOPT file is closed. (For example, the DD or DLBL statement for the COPOPT file is missing from the CICS JCL.)

You *can* start the Optimizer without the COPOPT file. If the COPOPT file is not available, any options that have been set for your site will not be available. The Optimizer does not assume that you want to use the default data stream optimization options. Rather than optimize data streams according to the defaults, SUPEROPT does *not* activate data stream optimization.

Note: If you start the Optimizer without the COPOPT file, the default options are used. Changes that you make to the defaults are *not* saved when you shut down the Optimizer.

If the Optimizer does not start, and you did not define the COPOPT options file, check the CSSL log for messages. The *3270 SUPEROPTIMIZER/CICS Messages Manual* contains explanations and user responses for these messages. Take appropriate action as indicated.

If you still cannot start the Optimizer, contact BMC Software Customer Support.

Using the Batch Print Program

BMC Software provides the COPBPRT batch program for printing screen data that has been routed to the COPRINT VSAM file. This section provides information and sample JCL for using this print program.

COPRINT File

You can route data to the COPRINT VSAM file by using the print options that are displayed on the following Monitor panels:

- Wraparound Data Stream Trace
- Print or Reset Statistics

REUSE Option

The REUSE option lets you use the EMPTYREQ option of the CEMT command to empty the COPRINT file after you have copied or printed the information that you have captured, such as trace information or statistics. For example, to close the file, type the following command:

CEMT SET FI(COPRINT) CLO EMPTYREQ

When you want to reopen the file, type the following command:

CEMT SET FI(COPRINT) OPE

The information in the COPRINT file is removed because the RBA pointer is reset to zero.

COPBPRT

To print screen data, use the batch print program, COPBPRT. The program prints one Monitor panel per page by adding an ASA carriage-control character to the records. *The DD card for the SYSOUT file must reflect the ASA character for your printer.*

The BMC Software batch print program can be used in MVS and VSE/ESA environments.

Note: To reset this file, you must perform a delete/define procedure if the REUSE option was not used when the file was defined.

Figure 4-3 shows sample MVS JCL to print the COPRINT VSAM file. This JCL is contained in *hilevel*.BBSAMP(COPBPRT).

Figure 4-3   MVS Sample JCL to Execute the Batch Print Program

```
//CSOBPRT  JOB (ACCOUNT),'NAME'
//*
//*          PROGRAM WILL PRINT THE CONTENTS OF THE
//*          COPRINT FILE.  FILE MUST BE CLOSED TO CICS.
//*
//*          USE IDCAMS DELETE-DEFINE TO CLEAR THE FILE AFTER          00180000
//*          EXECUTING COPBPRT.
//*
//BPRT    EXEC PGM=COPBPRT
//STEPLIB   DD DSN=BMC.CSO.LOAD,DISP=SHR
//*
//COPRINT   DD DSN=BMC.CSO.COPRINT,DISP=SHR
//PRINTER   DD SYSOUT=A,DCB=RECFM=FA
```

Figure 4-4 shows sample VSE/ESA JCL to print the COPRINT VSAM file. This JCL is contained in the COPBPRT book of your source statement library.

Figure 4-4   VSE/ESA Sample JCL to Execute the Batch Print Program

```
//CSOBPRT  JOB (ACCOUNT),'NAME'
//*
//*          PROGRAM WILL PRINT THE CONTENTS OF THE
//*          COPRINT FILE.  FILE MUST BE CLOSED TO CICS.
//*
//*          USE IDCAMS DELETE-DEFINE TO CLEAR THE FILE AFTER          00180000
//*          EXECUTING COPBPRT.
//*
//BPRT    EXEC PGM=COPBPRT
//STEPLIB   DD DSN=BMC.CSO.LOAD,DISP=SHR
//*
//COPRINT   DD DSN=BMC.CSO.COPRINT,DISP=SHR
//PRINTER   DD SYSOUT=A,DCB=RECFM=FA
```

Chapter 5   Optimization in Production

This chapter provides procedures for putting the Optimizer into production. This chapter contains the following sections:

Overview

Before you begin optimization on all data streams in your CICS system, you might want to perform some testing on SUPEROPT. Initially, you might not want to optimize every data stream in your CICS system. If every data stream is not optimized, optimization statistics for SUPEROPT will not be a good indication of the statistics when optimization is performed for all data streams.

Warning!   Before you test SUPEROPT, determine whether the **Erase Input** Key is used at your site. Input Suppression will not work properly with this key (the **Erase EOF** key is OK). If this key is used, change the Erase Input Key Allowed status to **Yes** *before* beginning your test. The Erase Input Key Allowed status is controlled from option 1.2.3.

For more information about the **Erase Input** key, see the *3270 SUPEROPTIMIZER/CICS User Guide*.

Selective Optimization

You might want to begin selective optimization of certain optimization techniques or to begin optimization of a particular terminal, Transid, or selected group of terminals or Transids. To turn on optimization gradually (after installation has been completed), start with just one Termid and test until you are confident that everything is working as expected. Add a selected group of Termids or Transids (using include/exclude) and test until you are comfortable with the results. Then, remove all excludes or includes that have restricted data stream optimization.

Turning On Optimization for One Termid

Summary: In this task, you will turn on optimization for one Termid (after installation has been completed).

To turn on optimization for one Termid, perform the following steps:

Step 1   Issue the Transid that you have chosen, and enter the Monitor.

The Initialization Options panel is displayed.

Step 2   Select option **1** to enter the Monitor.

The Primary Menu is displayed. The Optimizer is not started, but you can view the Monitor panels.

Step 3   To optimize the data streams for just one terminal, type =**1.1.1**.

The Global Optimization Control panel is displayed.

Step 4   Include just one Termid.

Note: If this terminal is local, turn on optimization for locals from the Local Terminals and Saved TIOA panel, option 1.3.5.

Message BMC7099I, `Optimizer Includes/Excludes changed`, is displayed.

Step 5   Press **F3** to return to the Primary Menu.

The Primary Menu is displayed.

Step 6   Start the Optimizer.

The Optimizer status is Active.

Step 7   Test as many transactions as you can from the one Termid, and verify that everything works as it should.

Transaction results should be as expected.

Note: If transaction results are not as expected, contact BMC Software Customer Support.

Turning On Optimization for a Select Group of Termids or Transids

Summary: In this task, you will turn on optimization gradually (after installation has been completed) for a group of Termids or Transids.

After testing from one Termid, select option **1.1.1** and turn on optimization for a select group of terminals or a select group of Transids by performing the following steps:

Step 1   Enter a generic Termid, or create a table of Termids to include the terminals.

Step 2   Enter a generic Transid, or create a table of Transids to include the Transids.

Note: To create a Termid or Transid table, see the *3270 SUPEROPTIMIZER/CICS User Guide*.

Optimization Statistics

When you have determined that no problems remain, remove all excludes or includes that have restricted the data stream optimization. You can begin to monitor the optimization statistics for SUPEROPT.

Note: Most sites find that their production CICS systems get better optimization statistics than their test systems.

Switching Environments

SUPEROPT can dynamically detect which release of CICS is being used and can adjust accordingly. SUPEROPT supports the following CICS releases:

- all versions of CICS Transaction Server (TS)
- all versions of CICS TS for VSE
- CICS/ESA 4.1
- CICS/VSE 2.3
- OS/390 and z/OS

You can move SUPEROPT back and forth between the CICS releases with no extra effort or problems.

To move between CICS releases, the appropriate CICS PPT entries for SUPEROPT must exist (for example, COPOPT53).

DOS/VSE or VSE/ESA to MVS

To switch from the DOS/VSE or VSE/ESA version of the BMC Software products to the MVS version, contact your BMC Software sales representative to arrange for a new tape and documentation set.

New Hardware

SUPEROPT does *not* contain "hardware-sensitive" code or files. You may switch DASD, 37*xx*, modems, or other hardware devices at any time.

The programs check the CPU ID to verify whether this device is a CPU on which the program is authorized to optimize data streams. During the trial period, CPU authorization is not necessary.

When a permanent license has been obtained, if you switch or add CPUs, contact your BMC Software sales representative.

New VTAM, TCAM, or BTAM Releases

SUPEROPT supports all releases of VTAM, TCAM, and BTAM (that are in use). As with CICS releases, the environment is dynamically detected and all adjustments are transparent to your site.

Warning!   When you are converting to VTAM 3.1 or later, *all* of your terminals will be treated as remote; all local terminals are optimized also.

Data Streams Not Optimized for Local Terminals

If you do *not* want the data streams for local terminals to be optimized, use option 1.1.1 to exclude them as follows:

- enter a specific Termid
- enter a generic Termid
- create a table with a list of Termids

Data Streams Optimized for Local Terminals

If the data streams for local terminals are to be optimized, ensure that enough Imaging storage has been specified. See option 1.6.1 on the Monitor panels.

Moving from Test to Production

Warning!   Before you start to move anything, determine whether the **Erase Input** (**Er Inp**) key is used in your site. If **Erase Input** is allowed, you can potentially corrupt all of your files when you move them. Also, Input Suppression will not work properly with this key (the **Erase EOF** key is OK). If **Erase Input** *is* used, change the status of **Erase Input Key Allowed** (in option 1.2.3) to **Yes** *before* you begin your test.

When you first move SUPEROPT from a test environment to production, many terminal users might notice a dramatic reduction in response times or an increase in the transaction rate.

Some more common situations that have happened at other user sites are as follows:

- Many terminal users, accustomed to longer response times and a visible blink of the screen, do not notice that their response is already back and might think that the terminal is operating in Do Not Optimize (NOOP) mode or that it is not functioning.

- Sites with a help desk or a technical support staff might receive questions such as, "Why doesn't my terminal blink?," or "My terminal is not responding."

- If teleprocessing transmission was the bottleneck in the system, the transaction rate might increase dramatically.

- CICS CPU time might increase.

SUPEROPT does require CPU time, but if CPU time increases dramatically, check the number of transactions that are being processed. With better response times, your terminal users are probably doing more work per day. Your CICS CPU time per transaction should change very little.

For more information about the **Erase Input** key, see "Overview" on page 5-2.

Defined Options File

The Optimizer uses a set of predefined (default) options at startup. To change these options and save the changes, you must define a COPOPT options file to CICS before you start the Optimizer. When the Optimizer is shut down, all option settings are saved to the COPOPT file. The next time you start the Optimizer, it uses the options that are in the COPOPT file.

If an FCT entry exists for the COPOPT options file, but no file has been defined, the Optimizer will not start.

No Options File

If a COPOPT options file does not exist and has not been defined, the Optimizer starts by using a set of default options. Ensure that the default options will give you the best optimization. If changes are necessary, you might want to create a COPOPT file to retain the changes between Optimizer shutdowns.

The changes that you make cannot be saved when the Optimizer is shut down if a COPOPT options file does not exist. The default options will be in effect at the next startup.

New Production COPOPT File

Check the defaults and make changes where necessary.

Tip: If you already know which options you need to change, you can perform one of the following actions:

- Start the Optimizer online from the Monitor (instead of the PLT) the first day in production, as follows:

Task	Action
1	When the Initialization Options panel is displayed, choose the option that lets you access the Monitor *without* starting the Optimizer.
2	Set the options that are necessary for this CICS system.
3	Start the Optimizer from the Primary Menu.

- Use the batch set options program that is supplied by BMC Software to set the options before starting the Optimizer.

For more information, see the *3270 SUPEROPTIMIZER/CICS User Guide*.

Existing COPOPT File

If you will be using the same COPOPT file that you used in testing, or if you have run an IDCAMS REPRO from your test file to the production COPOPT file, the Optimizer will use the options that have been retained in the COPOPT file. It will not use the default options at startup.

Example

In your *test* environment, you have changed the Data Storage Allocation Size for Imaging and SCS Printer in option 1.6.1 to 256 KB.

The Optimizer will use your 256 KB amount, *not* 2048 KB, which is the default if you move to a *production* environment.

The Optimizer cannot assume that you want the options changed automatically just because you have changed environments.

Maximizing Your Optimization

When you move from testing to production, you can maximize the amount of production optimization if you monitor the effects of the Monitor options that are accessed through the Optimization Control Menu (option 1.0.0).

You can measure the effects of these options with the statistics that are displayed on the following panels:

- Summary of Data Streams Optimized (option 2.1.0)
- Data Streams Optimized by Termid/Transid (option 2.2.0)
- Data Streams Excluded by Installation (option 2.3.0)
- Data Streams Excluded by Optimizer (option 2.4.0)
- Application Outbound Data Stream Errors (option 3.1.0)
- Hardware Inbound Data Stream Errors (option 3.2.0)

In addition, check option 9 to ensure that the statistics are being printed and reset at the correct times.

Maximum Optimization versus Highest Percentage Optimization

BMC Software wants to provide the best optimization possible for your site. The maximum amount of optimization might *not* be the highest percentage optimization.

Example

You have one transaction that gets a total of 95 percent optimization. However, this transaction represents only 10 percent of your data stream traffic.

If you only optimize the data streams for that transaction, you will get 95 percent optimization, but the 95 percent does *not* represent a total picture of your environment.

Besides the optimization percentage, it is also the number of data streams that are included for optimization that determines the maximum optimization—*the end result is how many total bytes are removed from your data streams*.

To ensure that the *highest total number of bytes* are removed from your data streams, check options 2.3.0 and 2.4.0. These panels list all reasons that any of your data streams have been excluded from (or not included for) optimization. If you can decrease the number of excluded data streams, you will increase optimization.

Optimization Checklist

Table 5-1 lists items that you should monitor on a continuing basis to ensure that your system is always getting the highest possible optimization. For more information about the options to control storage and optimization, see the *3270 SUPEROPTIMIZER/CICS User Guide*.

Table 5-1   Maximizing Optimization for SUPEROPT

X	Item	Action
	Verify all Transids, Termids, and TCAM QIDs included or excluded by the Global Optimization Exclude/Include options.	Use option 1.1.1 to exclude or include a Termid. Ensure that each Termid has been excluded for a valid reason.
	Verify Imaging is On for CRTs and printers.	Turn Imaging On or Off from option 1.2.1.
	Verify all Termids included or excluded by the Imaging Exclude/Include options.	Use option 1.2.1 to exclude or include a Termid. Ensure that each Termid has been excluded for a valid reason.
	Verify Input Suppression is On.	Turn Input Suppression On or Off from option 1.2.2.
	Verify all Termids included or excluded by the Input Suppression Exclude/Include options.	Use option 1.2.2 to exclude or include a Termid. Ensure that each Termid has been excluded for a valid reason.
	Verify all Termids included or excluded by the SNA Data Compression Exclude/Include option.	Use option 1.3.4 to exclude or include a Termid. Ensure that each Termid has been excluded for a valid reason.
	Verify all entries and tables.	Use options 1.4.1, 1.4.2, 1.4.3, and 1.4.4 to ensure each Termid and Transid has been listed for a valid reason.
	Verify that no user exit programs (if used) are causing the Optimizer to bypass data streams unnecessarily.	Use option 1.5.1 to specify the user exit program.
	Verify the Imaging and SCS Data Storage Allocation size. If this amount is too small, data streams will not be optimized using the Imaging technique.	Adjust the amount of data storage allocated from option 1.6.1.
	Verify the SCS Printer optimization is On, and that a sufficient amount of Imaging and SCS Data Storage has been specified.	Adjust the amount of data storage allocated from option 1.6.1.
	Verify the amounts specified for the Data Stream and 3270 Buffers Work Areas are sufficient.	Adjust the amount of data storage allocated from option 1.6.2.
	Verify the amounts specified for the Dynamic Terminal Areas are sufficient.	Adjust the amount of data storage allocated from option 1.6.3.

Minimizing CPU Usage

If your site has a limited amount of CPU available, you might want to tune the Optimizer for minimum CPU usage. However, *tuning might not yield the maximum amount of optimization*.

Table 5-2 lists actions that you can take to tune for minimum CPU usage.

Table 5-2   Items That You Can Tune to Minimize CPU Usage

X	Action	Option
	Use Imaging.	1.2.1
	If you have VTAM, use Input Suppression.	1.2.2
	Set Storage Compression to 0%.	1.6.1
	Avoid long lists of excludes and includes.	NA
	Exclude local terminals.	1.3.5
	Do not use the user exits.	1.5.1
	Do not use the Wraparound Data Stream Trace option.	3.4.0
	Use the CICS option PCT ONEWTE or SEND LAST.	NA
	Do not optimize SCS data streams.	NA
	Do not optimize your printer data streams.	NA
	Set the Dynamic Terminal Areas Reuse option to No.	1.6.3
	Set the Transid Statistics Areas to zero.	1.6.3

Input Suppression

Although Optimizer CPU usage might decrease if you turn off Input Suppression, the number of VTAM receives will increase. VTAM receives will use more CPU than the Optimizer.

Setting the Number of Transid Areas

Summary: In this task, you will set the number of Transid Statistic Areas to zero.

The number of Transid areas that are allocated cannot be set lower than the current number of areas that are used. To allocate a lower number of areas, you must shut down the Optimizer from the Monitor's Primary Menu and reinitialize. To set the number to zero, perform the following steps:

Step 1 Shut down the Optimizer from the Primary Menu.

The status becomes Inactive.

Step 2 In the **Option** field, type =**1.6.3**.

The Dynamic Terminal and Transid Areas panel is displayed.

Step 3 Set the Transid Statistic Areas number to zero.

Step 4 Press **Enter**.

The number that is allocated changes to zero.

Step 5 Return to the Primary Menu.

Step 6 Restart the Optimizer.

The Optimizer is restarted with the Transid Statistic Areas set to zero.

Minimizing Virtual Storage Usage

If only a limited amount of virtual storage is available at your site, you might want to tune the Optimizer to use a minimum amount of virtual storage. However, *tuning may not yield the maximum amount of optimization*.

To tune for minimum virtual storage usage, try as many of the items in Table 5-3 as required.

Table 5-3   Items That You Can Tune to Minimize Virtual Storage Usage

X	Item	Option
	Do not use the Wraparound Data Stream Trace option.	3.4.0
	Set Storage Compression to 40 to 80 percent.	1.6.1
	Set Imaging and SCS Data Storage Allocation Size to the smallest amount possible.	1.6.1
	Set the Data Stream Work Area Size to the smallest amount possible.	1.6.2
	Set the 3270 Buffers Work Area Size to the smallest amount possible.	1.6.2
	Set the Dynamic Terminal Areas to the smallest amount possible.	1.6.3
	Set the Transid Statistics Areas to the smallest amount possible.	1.6.3

Glossary

AID
Attention Identifier. The AID appears as the first byte in an inbound 3270 data stream. It indicates the source or type of data that follows. If the inbound data stream consists of structured fields, an additional AID byte can be embedded in the inbound 3270 data stream structured field. Valid AID bytes are as follows:

- **60** (No AID generated)
- **E8** (No AID generated)
- **88** (Structured field)
- **61** (Read partition)
- **7F** (Trigger action)
- **F1** (F1 key)
- **F2** (F2 key)
- **F3** (F3 key)
- **F4** (F4 key)
- **F5** (F5 key)
- **F6** (F6 key)
- **F7** (F7 key)
- **F8** (F8 key)
- **F9** (F9 key)
- **7A** (F10 key)
- **7B** (F11 key)
- **7C** (F12 key)
- **C1** (F13 key)
- **C2** (F14 key)
- **C3** (F15 key)
- **C4** (F16 key)
- **C5** (F17 key)
- **C6** (F18 key)
- **C7** (F19 key)
- **C8** (F20 key)
- **C9** (F21 key)
- **4A** (F22 key)
- **4B** (F23 key)

- **4C** (F24 key)
- **6C** (PA1 key)
- **6E** (PA2 key)
- **6B** (PA3 key)
- **6D** (Clear key)
- **6A** (Clear partition key)
- **7D** (Enter key)
- **7E** (Selector pen attention)
- **E6** (Magnetic Operator ID reader)
- **E7** (Magnetic reader number)

Basic Telecommunications Access Method

One of the Telecommunications access methods that CICS and 3270 SUPEROPTIMIZER®/CICS support.

BTAM

See Basic Telecommunications Access Method.

Common User Access

A set of basic online interface principles, techniques, and components for software applications developed to run on non-programmable terminals in IBM SAA operating environments.

CUA

See Common User Access.

DBCS

See double-byte character set.

DCT

See destination control table.

destination control table

A table that controls the routing of certain internal and external queues. The SUPEROPT product uses the DCT to queue CSMT to log critical messages—CSMT is a CICS-required DCT queue. The product also uses a DCT queue to print screens.

direct storage access

The ability to place input and output data in storage and to retrieve it without passing the data through the central processor.

double-byte character set

In countries where an alphabet is not used, characters are used to represent words. Since a single byte character set (SBCS) can have at most 256 characters, a double byte character set, using two bytes, is used. This provides for 65,536 (256 times 256) possible characters.

DSA

See direct storage access.

DTA

See dynamic terminal area.

dynamic terminal area

An area that is assigned to each terminal that is dynamically allocated by using the CICS Autoinstall feature. You can specify up to 32,767 of these areas, each of which is 92 bytes.

ECSA Acronym for extended common service area.

EDSA Acronym for extended direct service area.

ELPA Acronym for extended link pack area.

FCT *See* file control table.

field On a 3270, field refers to an area on the screen that starts with an attribute byte and ends with the next attribute byte. All characters, except on terminals with extended attributes in the field, share the same attributes: bright, protected, and so forth.

file control table This table defines files to CICS. SUPEROPT uses the file COPOPT to record the current status of the Optimizer, as well as all user-specified options.

SUPEROPT can also optionally use a file for printing.

high-level qualifier One or more parts of a data set name that combine with a low-level qualifier or a suffix to make the complete data set name.

hilevel *See* high-level qualifier.

HLQ *See* high-level qualifier.

link pack area An area of virtual storage containing reentrant routines that can be used concurrently by all tasks in the system.

local shared resources

Files that share a common pool of buffers and a common pool of strings, that is, control blocks supporting the I/O operation.

LPA *See* link pack area.

LSR *See* local shared resources.

MDT *See* modified data tag.

modified data tag A bit in each attribute byte describing the field in the 3270 buffer. This bit is set *on* if the terminal operator modifies the field, or it can be *set pre-modified* by the application program. On a subsequent read-modified command, only the modified fields are sent back to the CPU or communications controller.

MRO   *See* multiregion operation.

multiregion operation

A mechanism by which different CICS address spaces and partitions within the same CPU can communicate and share resources.

PCT   *See* program control table.

PLT   *See* program list table.

PLTPI   *See* program list table program initialization.

PLTSD   *See* program list table shutdown.

PPT   *See* program processing table.

program control table

The PCT defines transactions to CICS. You can invoke the Monitor by using the Transid identified in the PCT.

program list table   This table defines programs to CICS. In CICS, the PLTPI is a list of programs invoked during CICS System Initialization processing. The Monitor module, COPINIT, if placed in this list, can optionally start the Optimizer at system initialization time automatically.

program list table for program initialization

The PLTPI is a list of programs invoked during CICS System Initialization processing.

program list table shutdown

This table contains a list of programs invoked during CICS shutdown processing. The Monitor module, COPMON, if placed in this list, can optionally print the Monitor screens at shutdown time to provide a permanent record of performance data. The Optimizer is also stopped.

program processing table

This table defines the list of programs and their properties for CICS. There are five required entries in the PPT for SUPEROPT and a number of optional entries.

RDO   *See* resource definition online.

resource definition online

A CICS facility that lets you interactively create and modify resources.

SIT   *See* system initialization table.

SMS   *See* Storage Management Subsystem.

SMF   *See* system management facilities.

SNA data streams   System Network Architecture. Refers to data streams that contain special SNA characters for formatting the data streams.

Storage Management Subsystem
                       An MVS component that is used to automate and centralize storage management. It provides control over data class, storage class, management class, storage group, and automatic class selection (ACS) routine definitions.

SVA   Acronym for shared virtual area.

system initialization table
                       This table describes the initialization parameters that CICS uses. The SUPEROPT product requires two parameters to be set in this table or in the parameter overrides.

system management facilities
                       An optional control program feature of MVS that provides gathering and recording information that can be used to evaluate system use.

VOLSER   *See* volume serial number.

volume   A portion of storage on a tape or disk that can be conveniently handled as a unit.

volume serial number
                       A number in the volume label that may be assigned to a tape or disk when the volume is prepared for use in a system.

VSAM   Virtual Storage Access Method. The access method used by SUPEROPT for the COPOPT file and all optional files for printing.

VTAM   Virtual Telecommunications Access Method. One of the Telecommunications access methods that CICS and SUPEROPT support.

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PROPRIETARY RIGHTS. ALL ARBITRATION PROCEEDINGS SHALL BE CONDUCTED IN CONFIDENCE, AND THE PARTY PREVAILING IN ARBITRATION SHALL BE ENTITLED TO RECOVER ITS REASONABLE ATTORNEYS' FEES AND NECESSARY COSTS INCURRED RELATED THERETO FROM THE OTHER PARTY.

U.S. GOVERNMENT RESTRICTED RIGHTS. The Software under this Agreement is "commercial computer software" as that term is described in 48 C.F.R. 252.227-7014(a)(1). If acquired by or on behalf of a civilian agency, the U.S. Government acquires this commercial computer software and/or commercial computer software documentation subject to the terms of this Agreement as specified in 48 C.F.R. 12.212 (Computer Software) and 12.211 (Technical Data) of the Federal Acquisition Regulations ("**FAR**") and its successors. If acquired by or on behalf of any agency within the Department of Defense ("**DOD**"), the U.S. Government acquires this commercial computer software and/or commercial computer software documentation subject to the terms of this Agreement as specified in 48 C.F.R. 227.7202 of the DOD FAR Supplement and its successors.
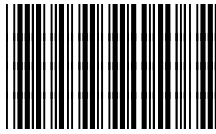
MISCELLANEOUS TERMS. You agree to pay BMC all amounts owed no later than 30 days from the date of the applicable invoice, unless otherwise provided on the order for the License to the Products. You will pay, or reimburse BMC, for taxes of any kind, including sales, use, duty, tariffs, customs, withholding, property, value-added (VAT), and other similar federal, state or local taxes (other than taxes based on BMC's net income) imposed in connection with the Product and/or the Support. This Agreement constitutes the entire agreement between You and BMC and supersedes any prior or contemporaneous negotiations or agreements, whether oral, written or displayed electronically, concerning the Product and related subject matter. No modification or waiver of any provision hereof will be effective unless made in a writing signed by both BMC and You. You may not assign or transfer this Agreement or a License to a third party without BMC's prior written consent. Should any provision of this Agreement be invalid or unenforceable, the remainder of the provisions will remain in effect. The parties have agreed that this Agreement and the documents related thereto be drawn up in the English language. Les parties exigent que la présente convention ainsi que les documents qui s'y rattachent soient rédigés en anglais.

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Notes

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